FEEDSTUFFS

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

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Laying Flock 2% Smaller Than Year Ago

WASHINGTON — The U.S. laying flock averaged about 374 million layers in October, 2% less than in October last year, but 7% above the 1944-53 average, the U.S. Department of Agriculture reports.

All parts of the country showed decreases except the South Atlantic, where numbers equaled last year. Decreases ranged from 1% in the North Atlantic and East North Central to 3% in the West North Central and South Central states.

The seasonal increase in layers from Oct. 1 to Nov. 1, USDA says, was 5%, the same as last year, compared with the average of 9%.

Potential layers (hens and pullets of laying age plus pullets not of laying age) on farms Nov. 1 totaled 458 million—2% less than a year earlier and 4% below average. Holdings were smaller than a year earlier in all parts of the country except the South Atlantic and West areas. (See table on page 73.)

Pullets not of laying age on farms Nov. 1 totaled about 75 million—2% less than last year and 33% below average. Decreases of 2% in the South Central, 3% in the East North Central and 7% in the West North Central more than offset increases of 5% in the South Atlantic and 10% in the West.

Farm flocks laid 5,181 million eggs in October, USDA says, 2% more than in October last year and 37% above the 1944-53 average.

The rate of egg production in October as 13.9 eggs, a new high for the month, compared with 13.4 last year and the average of 10.8 eggs. Rate per layer on hand during the first 10 months of this year was 161 eggs, USDA says, compared with 158 last year and the average of 145 eggs.

Prices received by farmers for eggs in mid-October averaged 42.9¢ doz., compared with 32.4¢ a year earlier.

FORMULA FEED PRODUCTION

On page 6 Feedstuffs presents its annual state-by-state estimate of formula feed production and consumption for 1954, together with revised 1953 estimates.

Teamwork Praised at Feed School Ceremony

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600 Turn Out For Dedication At Manhattan

MANHATTAN, KANSAS—A major step in the development of a college feed technology program was climaxed here Nov. 10 when the new feed technology facilities at Kansas State College were officially presented to the college and were dedicated to research and training.

The event, considered one of the most significant in formula feed industry history, attracted a crowd which included some 600 feed industry leaders and representatives from throughout the country.

As the industry-contributed feed technology building and pilot feed mill were formally presented to the college, speakers noted that this was only the first step in a new program which involved a significant interrelationship of industry, education and agriculture.

The job now, it was pointed out, is to carry forward with the new facilities the program of feed technology training and research, to attract and educate outstanding young men for responsible positions in the feed industry, and to provide positions for them in the industry.

The dedication of the feed technology facilities climaxed a drive started in 1951, which found feed and allied businesses in all parts of the country contributing funds and equipment to provide a half-million-dollar plant for the feed technology program at Kansas State, the only college feed curriculum in the world. Indicating the importance with which the event was regarded by the industry was the large crowd of feed men which converged on Manhattan.

Included in the crowd were 350 feed men who traveled from Kansas

(Continued on page 69)

Analyses of Current Vegetable Meal Situation Are at Variance

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — Feed industry and government officials are far apart in their analyses of the vegetable protein situation for this crop year.

The two big supply units, soybeans and cottonseed, are casting shadows on the best informed opinions available to this office. The soybean crop now seems nailed down to a 372 million-bushel level, according to the U.S. Department of Agriculture crop report for November, down 2% from the previous month's estimate. There are clear implications in the USDA report, however, that a later crop report may show some further reduction in bean production.

Offsetting any decline in bean production is the USDA cotton crop estimate of nearly 15 million bales and a potential of 16 million. On the basis of a 15-million bale crop, USDA estimates the cottonseed outturn will be 6,119,000 tons.

These are the basic factors which make for disputes over the vegetable meal price prospects for the coming year. Added, of course, is the uncertain quantity of vegetable and edible fats exports.

Tough-minded feed industry experts within the USDA and some outside the government in integrated warehousing-feed manufacturing and merchandising companies say that notwithstanding an indicated surplus of vegetable protein meals, there will be no over-all surplus of meal. They contend that world oil requirements

(Continued on page 8)

Product-Feed Ratios Change Little; Broiler Ratio Drops

WASHINGTON — The relationship of prices farmers received for livestock and poultry to feeding costs showed mixed changes in the month ending in mid-October, the U.S. Department of Agriculture reports in its current compilation of farm prices. The broiler-feed ratio suffered the largest adverse change while the turkey-feed and butterfat-feed ratios registered the largest increase. In spite of falling hog prices, the hog-corn ratio remained steady.

(Comparisons by region are shown in the table on page 69.)

Improvements in commodity-feed price ratios were noted in the butterfat-feed, milk-feed and turkey-feed relationships. In mid-October, USDA reports, 1 lb. of turkey would buy 9.2 lb. of feed, compared with 8.9 in mid-September. This ratio is well above the 7.1 ratio reported in October, 1954, but not up to the 1944-53 average level when 1 lb. of turkey would buy 9.5 lb. of feed.

The same point increase was reported by USDA for the butterfat-feed ratio. In mid-October, 1 lb. of butterfat would buy 21.5 lb. concentrate rations, compared with 21.2 a month earlier and 19.8 a year earlier. The milk-feed ratio went from 1.36 in mid-September to 1.43 in mid-October, above the average 1944-53 level of 1.27.

The broiler-feed ratio registered the most significant change, dropping from 5.3 in mid-September to 4.6 in mid-October. The ratio is still higher than a year earlier when it was 4.

Other drops were noted for the ratio of chicken-feed (from 5.4 in mid-September to 5.3 in mid-October but above last October's 3.7), and egg-feed (from 12.6 in September to 12.5 in October but above last October's 8.5).

The hog-corn ratio in mid-October was 12.7, USDA reports, the same as a month earlier and a year earlier.

Average Feed Prices

Average prices for feed paid by farmers in October, according to USDA figures, were as follows (in cwts., with previous month and year-ago figures in parentheses, in that order): laying mash $4.47 ($4.45 and $4.77); broiler growing mash $4.88 ($4.85 and $5.19); mixed dairy feed under 29% protein $3.65 ($3.64 and $3.86); mixed dairy feed over 29% protein $4.40 ($4.36 and $4.78).

A sharper than seasonal increase

(Continued on page 73)

Look Into Future Provided At Feed Production School

KANSAS CITY—The increasingly competitive nature of the feed manufacturing business brought a record crowd to the Midwest Feed Production School this week, and it brought a school program which provided a look into future needs and trends in feed manufacturing.

Some 425 feed production men, recognizing the need for more information on production methods and means of reducing costs, turned out for the three day school held here Nov. 7-9 under the sponsorship of the Midwest Feed Manufacturers Assn.

In providing a look into the future, the school focused new attention on the word "automation" and what increasingly automatic and mechanized operations mean to feed manufacturing. At the same time, the school provided new ideas on ways of carrying out old processes.

The fact that the industry has become more cost-conscious while turning out improved products was emphasized in all of the talks and panel discussion sessions covering all aspects of feed production during the busy three days.

Feed men from 34 states and two foreign countries were on hand to hear the talks and discussions by almost 50 production authorities.

Dwight Dannen, Dannen Mills, Inc., St. Joseph, Mo., chairman of the school, set the stage for the program when he pointed out: "Feed manufacturing has come to the point where

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★ FEEDSTUFFS ★

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Outstanding Achievement

FORMAL dedication of the half-million-dollar feed technology building and pilot feed mill at Manhattan, Kansas, on Nov. 10, is the climax, to date, of one of the greatest cooperative movements ever carried out by an industry. Few, if any, industries ever tackled a similar project, let alone carrying it to successful completion. The idea for a Feed Technology School to train men in feed formulation, production and merchandising was first proposed in 1950. It was given official industry backing in 1951. The school itself is now in its third year. Availability of the new building and pilot feed mill marks the accomplishment of a major and hard-won objective.

Much of the credit for the feed industry work in helping to establish the feed technology program at Kansas State College goes to members of the Feed Technology Advisory Committee, comprised of representatives of the feed manufacturing industry. The committee and its subcommittees have been active in helping and advising the college in various aspects of the program, and they led the several campaigns for contributions of money and equipment for the construction and equipping of the feed technology building and pilot feed mill. Also, some of the members have provided engineering services.

A total of $472,872 was contributed in cash, equipment and services to build the facilities that will be the center of the feed technology course. These represent actual contributions. Laboratory and other equipment to be added in the future will increase the value of the properties to more than $500,000.

The Honor Roll of contributors to this unique and important project was published in last week's Feedstuffs. It contains the names of almost every important company engaged in or allied with feed manufacturing during the past five years. The school, and the mill, are truly an industry project. If the same spirit of cooperation goes into the maintenance and support of the school, every one associated with the feed industry will harvest substantial rewards.

★ ★ ★

IN connection with the potential value of the school to the feed industry, we could hardly have a clearer statement than that published a week ago in Feedstuffs, written by Maurice Johnson, of the Staley Milling Co., Kansas City. Mr. Johnson served as the first chairman of the Feed Technology Advisory Committee, and he has applied a tremendous amount of his time and thought to the project. If any one man could be called the father of the idea for a Feed Technology School, Mr. Johnson would be that man, and certainly no one has done more than—or as much as—he to develop the idea into a reality. Maury Johnson deserves a high place on the feed industry's list of individuals to whom it is permanently indebted.

For the sake of emphasis, we want to repeat these statements of Mr. Johnson's on what the new Feed Technology School means to the feed industry, and how it should be utilized. We think they are words that feed men should remember, for they have important meaning to everyone in the industry:

"It would be easy to go on showing how our industry's personnel appetites can be satisfied by proper use of this great new curriculum.

"The answer may be summarized by saying that the feed technology program and its graduates will satisfy these needs only to the extent that the industry helps prime the new pump by supplying students, and by offering the graduates good opportunities to show their skill—and paying them well to do it.

"We are in a fiercely competitive field now that we have thrown our lot into the field of competing with other great industries for graduates.

"We must not be afraid to meet that competition with good jobs, rapid advancement where justified, broad opportunity and freedom for the progressive graduates, and a willingness to step up our already fast advancing pace.

"Observe the employment and personnel training techniques of the successful 'name' industries and no further proof of the wisdom of this course is needed.

"The graduates of this feed tech course will speak more powerfully than we do. Their feeling and influence will determine in a few short years what kind of enrollment and what quality graduates we shall get. Let us not fail to perform as boldly in our employment of these men as we did when we built the structure to train them.

"Finally, as an industry following this pattern, we should mature into a service institution for agriculture that will be rewarded even more generously for what we do. The more scientific and efficient we become, the more premiums we shall get in terms of security, well being and a feeling of usefulness.

"We have already chosen the high road, and have done a good bit towards building it. In a few years we can become an outstanding example of the success of a partnership between education, agriculture and industry."

A FEEDSTUFFS FORMULA FEEDS: HOW'S BUSINESS? FEATURE

Some mild improvement in formula feed demand developed in a few areas this week, but on the whole business remained dull in most of the country. Only the approach of winter and increased seasonal needs for feed material promised to make for broader improvement in feed buying. While feeding ratios are not considered too unfavorable, farmers are reluctant to spend money for feed when they have large quantities of home-grown grains on hand. Ingredient markets were easier throughout most of the period, although some signs of improvement were seen near the end of the period. The index of wholesale feedstuffs prices declined 1.5 points to 186.9 and the feed grain index advanced 3.9 to 177.4 in the week ending Nov. 9. (Ingredient details on pages 70-72.)

Southwest

Some minor improvement in feed sales was noted by a few mills in the Southwest this week, but in general business still was at a disappointing level. Plants which have an opportunity to work on cattle feed for shipment to northern sections of the area operated at improved rates this week, while others with main items for hog and poultry feeding continued to find business slack.

Demand for poultry feed has been slow. Some improvement in broiler feed demand was noted as a result of slightly better broiler prices in the Arkansas area. The hog market still hovers around the recent unsatisfactory levels, and many feeders are delaying or reducing feeding of concentrates until colder weather. Dairy feed sales have been slow.

The price trend is lower this week, led by the decline in soybean oil meal. Demand for most feed ingredients was limited, and any advances in prices were influenced solely by reduced supplies. Formula prices were steady to $2 ton lower. Operations were reported to be about five days on the average.

Northwest

Formula feed business showed some fair improvement in the Northwest this week for some manufacturers, but for others the volume was about the same as a week ago.

Some manufacturers believe that a definite fall upturn in business is under way, although at the same time they are not too optimistic about business reaching the same volume as a year ago because of the general discouragement of many farmers over farm price trends. Farmers, they note, tend to cut back first on feed purchases when dissatisfied with prices for their products.

Hog feed buying was steady to lighter this week, and dairy volume continued good for some manufacturers but light for others. Through this week cattle have been out on pasture in much of the big dairying area, but the prospect of snow forecast at the end of the week indicated a possible end to outdoor feeding and better feed demand.

Poultry are being housed and consequently laying feed demand picked up somewhat. Demand is centered on concentrates in most instances.

Demand for beef cattle feed also is gaining seasonally, and further improvement in this business is indicated.

Feed volume in the area averaged about the same in October as a year ago to about 10% off for some firms. Operations this week at major mills ranged from one and one half shifts to two shifts, with fairly good backlogs of orders for next week.

Southeast

The feed situation is practically unchanged in the Southeast. Demand is slow, and with very few exceptions most of the trade reports that feeding operations are considerably off. Weather and prices still control the amount of feed business being done, and many feed men feel that it will take some good cold weather to see an increase in feed consumption.

Local corn is selling at bargain prices, and it is reported that most farmers are feeding straight corn instead of a balanced ration. The weather continues open and relatively mild, with moisture needed in some parts of the Southeast.

The broiler market has advanced slightly from most recent low prices, but most producers complain that it is a losing proposition to raise broilers at today's market even with reduced feed costs. Baby chicks are more plentiful this week than they have been for several weeks, and this is expected to possibly increase chick placements beginning immediately.

Feed manufacturers are believed to have a relatively large inventory of ingredients on hand, and this is shown by the fact that processors and other ingredient suppliers are in need of shipping directions. Material which was booked some time ago is not being ordered out on schedule in many cases. Jobbers of feed ingredients are making the market on some feed material.

Production of new crop citrus pulp has picked up considerably this week, and although orders still exceed production, it is believed that a balance will be reached in the near future. In order to meet competition and a shortage of some ingredients, there are reports that quite a few feed manufacturers have resorted to substitution of some main feed ingredients.

Ohio Valley

Sales of formula feeds continued dull this week in the Ohio Valley, but manufacturers were looking forward to the possibility of colder weather that they are hopeful will provide a much-needed buying incentive.

Light frosts were reported over much of the valley area this week, with forecasts for much colder weather ahead. If this happens it will kill off the last of the pasturage and thus increase indoor feeding considerably.

Despite currently low prices for meats and eggs, valley farmers are

(Continued on page 74)

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Crop Report Shows Little Change of Consequence in Feed Grain Production

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—On the feed grain side, the official November crop report of the U.S. Department of Agriculture discloses little change of consequence. Corn outturn is up 2% from the October estimate, while soybeans at an estimated 372 million bushels are off 1% from October.

The volume of corn for grain is not too far above last year's crop. USDA is reporting now that corn for grain will probably not exceed 2,825 million bushels, compared with 2,652 million in 1954. There are, however, trade agronomists who feel that the 1955 crop ultimately will disclose a corn crop for grain not higher than the 1954 level.

An index of what may be expected from gleaning is contained in the USDA report as follows: "There was considerable shelling by mechanical pickers in latter October when the stalks were dry. Livestock are salvaging much of the grain left in the fields." Quality of the crop is good and the moisture content of the ear corn is low enough for safe storage, the report says.

Yields have followed the drouth pattern reported previously by Feedstuffs. Nebraska, South Dakota and western Iowa yields are below average, USDA says, because of the severe drouth damage.

In the Southeast and southern states the importance of the corn crop is assuming greater proportions, according to the USDA report, due to improved varieties of seed, heavier use of plant food and improved cultivation practices. Evidence of educational progress in new corn areas may be found in the reported 45% increase in yield per acre in the Rocky Mountain and Pacific Coast states over the 10-year average.

The possibilities of crop switching as acreage allotments are imposed on other crops is indicated in the report that California and Arizona this year produced an excellent crop on irrigated lands.

Practically all corn matured before frost this fall.

With soybean harvesting virtually completed in the main producing belt, USDA reports an outturn of approximately 372 million bushels, a drop of about 3 million bushels from the official October estimate, but still 29 million bushels above 1954, the previous record. The crop is of good quality. But, significantly, USDA notes that bean sizes are small in many areas, possibly anticipating a further reduction in its soybean estimate next month.

The decline in production was reported mainly from Indiana and Missouri.

The increasing importance of sorghum grains and their possible competitive potential with corn—as influenced by price support programs and acreage allotments on other crops—may be seen in the November report for that crop. USDA says the U.S. will produce approximately 227 million bushels this crop year. This estimate is 1% smaller than indicated in October, but 10% larger than last year's crop.

Approximately 60% of the U.S. production is in Texas where yields this year were good in the upper coastal and central blackland counties and in the irrigated areas of the high plains. Killing frosts ended the growing season the first week in November in those areas.

Pastures Improved

Pastures gained notably during the month over much of the country, the USDA report shows. On Nov. 1 they were in the best shape for that date since 1951. Range feed in western states on Nov. 1 was the best since 1950, and winter feed supplies are generally better than a year ago, USDA says.

Hay and roughage production this year generally has been ample to large. The largest hay crop ever—nearly 110 million tons—was still being stored in October in many areas from late growth, USDA reports. Hay and roughage supplies are larger than last year in all areas except West North Central, and greatly improved over last year's drouth scarcity in South Atlantic and South Central States, the report states.

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Choline	1000 Gm	0.15c/Gm	25% Feed Mix	1.50
Xanthophyll	190 Gm	30c/Gm (2)	Commercial Concentrates	57.76
Alpha Tocopherol	300,000 IU	10.5c/1000 IU	Comm. Acetate 20,000 IU/lb.	31.50
Carotene	200,000,000 IU	14.5c/Million IU	Comm. Vitamin A Acetate	29.00
Vitamin K	70 Gm	6.0c/Gm	Comm. Product	4.20
Niacin	36 Gm	0.8c/Gm	Comm. Product	.29
Pantothenic Acid	32 Gm	6.0c/Gm	Comm. Feed Supp.	1.92
Riboflavin	14 Gm	6.0c/Gm	Comm. Product	.84
Folic Acid	8 Gm	$1.00/Gm	Comm. Product	8.00
Replacement Value	1320 lbs.	(3)		(3)
			TOTAL	$169.51

(1) Chosen because the amino acid composition of alfalfa protein more closely resembles meat protein than it does oilseed protein.

(2) After deducting the value of the oil and carotene.

(3) Replacement value will depend on individual formulation, but is of real dollar significance. 1,320 lbs. is one ton less 680 lbs. Protein Carrier.

NOTE: Not all of the items listed are necessarily in dehydrated alfalfa at the level desired, however, the calculations are based on what the cost would be to the user of dehydrated alfalfa if he went out to buy them.

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Oils, Fats Association Names William K. Bing

WASHINGTON—William K. Bing, chief of program analysis branch of the Oils and Peanut Division, U.S. Department of Agriculture, will join the staff of the Bureau of Raw Materials for American Vegetable Oils and Fats Industries. His appointment as assistant manager of the Washington office will be effective by Dec. 1.

Mr. Bing will replace George L. Prichard who resigned on Oct. 1 to become Washington representative of the National Soybean Processors Assn., and who will also retain his position as executive secretary of the National Flaxseed Processors Assn.

Minneapolis Shippers to Meet Nov. 15

MINNEAPOLIS—A talk on river, harbor and flood control projects will highlight the Nov. 15 meeting of the Minneapolis Grain Shippers Assn., announces D. T. McLaughlin, Burdick Grain Co., president of the group.

Main speaker will be Col. Otto J. Rohde, district engineer for the St. Paul district, Corps of Engineers. Col. Rhode heads government contracts in the Mississippi and Red River valleys. The dinner meeting will begin at 6 p.m. at the Covered Wagon, Minneapolis.

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Formula Feed Production and Consumption, by States 1953-54

IN TONS

State	Production of Formula Feed		Consumption of Formula Feed		Consumption of Poultry Feed		Consumption of Dairy Feed		Consumption of Swine Feed		Consumption of All Other Formula Feed	
	1953	1954	1953	1954	1953	1954	1953	1954	1953	1954	1953	1954
Alabama	615,680	734,100	529,243	667,400	278,245	425,000	114,468	92,000	33,412	44,400	103,118	106,000
Arizona	47,250	46,800	129,559	132,700	91,000	99,000	31,000	25,100	3,659	4,500	3,900	4,100
Arkansas	355,240	371,500	516,557	590,800	291,588	342,600	162,105	174,600	20,419	30,600	42,445	43,000
California	3,352,700	3,281,500	3,337,000	3,201,800	2,147,100	2,060,800	676,700	613,800	61,200	57,200	452,000	460,000
Colorado	118,125	176,900	244,189	262,000	164,500	178,800	29,089	18,700	19,500	32,500	31,100	32,000
Connecticut	166,950	176,900	514,000	518,800	364,690	383,600	138,200	124,100	1,515	1,500	9,585	9,600
Delaware	510,720	521,300	361,446	399,600	341,008	381,900	15,060	12,600	2,980	3,000	2,398	2,100
Florida	398,840	172,500	748,400	739,200	515,360	531,200	191,400	166,800	30,720	32,100	10,920	9,100
Georgia	466,370	551,900	1,125,319	1,354,700	822,800	1,052,900	209,500	179,600	81,919	110,200	11,100	12,000
Idaho	57,375	56,900	114,000	135,500	79,000	86,300	19,000	22,200	14,000	24,000	2,000	3,000
Illinois	2,407,860	2,574,600	1,291,000	1,456,900	782,389	894,600	88,300	67,500	311,200	384,800	109,111	110,000
Indiana*	1,167,670	1,108,300	1,101,054	1,254,000	575,090	621,800	50,000	49,000	247,515	297,200	228,449	286,000
Iowa	977,760	1,039,000	1,590,000	1,672,300	817,000	849,000	74,000	54,900	527,400	588,400	171,600	180,000
Kansas	519,435	557,600	544,000	617,900	411,900	421,100	37,000	75,300	72,500	98,500	22,600	23,000
Kentucky	479,360	493,000	533,825	582,800	208,108	234,400	142,667	100,400	49,259	70,000	133,791	128,000
Louisiana	229,320	271,600	348,100	341,100	136,745	149,100	130,622	108,000	27,775	30,000	52,858	54,000
Maine*	100,340	104,700	478,900	499,300	333,300	354,200	121,200	119,100	6,220	6,900	18,180	19,100
Maryland	493,920	504,700	808,300	801,500	724,920	715,900	72,800	72,900	8,520	10,800	2,060	1,900
Massachusetts	564,300	476,800	814,690	813,200	632,060	658,700	160,700	129,600	17,370	19,300	4,560	5,600
Michigan	301,350	310,900	627,400	696,800	519,500	541,800	29,700	56,000	30,200	49,000	48,000	50,000
Minnesota	1,105,600	1,188,800	697,437	768,600	413,037	463,600	122,000	89,900	144,400	196,100	18,000	19,000
Mississippi	321,880	380,900	393,840	461,300	220,255	253,800	118,000	146,900	11,698	16,600	43,887	44,000
Missouri	1,675,190	1,780,400	1,065,946	1,110,000	362,406	359,400	213,180	221,200	106,590	148,400	383,770	381,000
Montana	46,125	45,700	220,000	194,000	128,100	135,900	42,500	2,700	12,400	17,400	37,000	38,000
Nebraska	519,435	558,600	519,835	556,500	150,331	157,900	17,622	21,300	64,962	92,300	286,920	285,000
Nevada	.....	3,000	34,000	39,800	23,100	31,000	7,000	4,300	1,450	1,900	2,450	2,600
New Hampshire	200,340	204,300	237,500	232,800	161,690	167,500	70,700	60,100	2,020	2,200	3,090	3,000
New Jersey	549,990	541,500	796,000	775,500	565,600	579,500	214,000	169,900	3,470	13,100	12,930	13,000
New Mexico	41,250	40,800	200,000	186,700	140,000	147,900	44,000	19,100	7,000	10,200	9,000	9,500
New York*	4,211,470	4,207,900	2,769,975	2,679,600	1,520,255	1,525,700	1,100,000	995,900	127,700	128,000	22,020	30,000
North Carolina	815,360	964,000	842,860	895,600	565,058	625,000	145,393	115,600	101,225	130,000	31,184	25,000
North Dakota	68,040	73,800	35,173	45,300	25,992	35,500	2,460	2,800	2,182	2,400	4,539	4,600
Ohio	2,841,040	2,936,500	757,500	769,800	446,320	481,000	136,000	113,000	169,900	170,000	5,280	5,800
Oklahoma	276,805	275,700	493,940	460,900	227,043	235,500	205,230	147,400	31,830	51,000	29,837	27,000
Oregon	380,140	445,900	460,750	436,900	255,000	260,000	168,000	136,000	14,000	19,400	23,750	21,500
Pennsylvania	1,813,415	1,797,900	1,591,900	1,646,700	1,046,020	1,086,600	428,350	433,500	53,630	65,100	63,900	61,500
Rhode Island*	.....	3,800	105,145	95,800	65,680	67,500	37,450	25,800	500	1,000	1,515	1,500
South Carolina	161,200	191,300	319,714	387,000	225,913	288,200	53,207	50,000	24,651	32,800	15,943	16,000
South Dakota	55,620	59,200	120,000	143,200	63,000	71,400	6,500	3,200	33,000	51,600	17,500	17,000
Tennessee	1,265,160	1,497,200	520,000	630,400	375,100	387,400	61,100	132,900	69,000	94,200	14,800	15,900
Texas	1,686,975	1,690,500	2,240,000	2,377,700	1,138,000	1,179,400	332,000	372,800	109,400	167,500	660,600	658,000
Utah	225,000	223,600	80,500	102,200	55,500	76,000	17,500	18,400	600	700	6,900	7,100
Vermont	466,300	575,400	655,040	709,100	431,940	439,800	207,160	252,400	810	700	15,130	16,200
Virginia	655,600	669,500	793,437	868,600	533,236	561,400	140,641	175,500	35,627	46,800	83,933	84,900
Washington	530,260	621,100	491,000	581,400	337,100	357,800	105,700	166,800	13,800	21,300	34,400	35,500
West Virginia	70,560	72,000	326,990	373,800	212,413	248,400	78,985	86,300	14,988	19,900	20,624	19,200
Wisconsin	408,240	441,600	688,484	796,600	279,380	312,600	143,637	193,900	49,720	78,100	215,747	212,000
Wyoming	45,750	45,200	142,000	148,200	77,000	84,200	3,500	4,900	1,000	1,100	60,500	58,000
Totals	33,767,310	35,067,600	33,355,948	35,162,300	20,280,772	21,602,600	6,715,306	6,424,700	2,774,836	3,484,700	3,584,934	3,650,300

*1953 figures revised.

ESTIMATES of formula feed production and consumption by major classes for each state in the U.S., prepared by Feedstuffs research department, present the details of the 1954 increase in formula feed consumption over the total consumed in the previous year.

Total formula feed consumption in the U.S. in 1954 is shown at 35,162,300 tons compared with 33,355,948 tons in 1953. The 1954 total includes 21,602,600 tons of poultry feed, 6,424,700 tons of dairy feed, 3,484,700 tons of swine feed and 3,650,300 tons of other feed.

Most states showed at least some gain in formula feed consumption in 1954 over 1953. The states leading in formula feed production—all with indicated output of more than 1 million tons for the year—are New York, California, Ohio, Illinois, Texas, Pennsylvania, Missouri, Tennessee, Indiana, Minnesota and Iowa. States topping 1 million tons in formula feed consumption include all of these except Ohio, Tennessee and Minnesota. Georgia also consumed more than 1 million tons.

Feedstuffs' research department, directed by L. R. McDonald, made these estimates on the basis of a variety of data. The first column lists the amounts of formula feed produced by manufacturers in each state. Among the sources of information used in preparing production estimates was the American Feed Manufacturers Assn. report on total U.S. feed production. Other sources, including U.S. Bureau of Census data, were used in estimating state production totals.

Consumption Estimates

The figures reporting consumption of poultry feed by states have been derived statistically from other data, including U.S. Department of Agriculture figures on broiler, turkey and chicken production. The dairy feed consumption figures were computed from USDA reports, including those on rations fed to milk cows. Swine feed consumption figures also were derived from USDA information and other data on hog production and feeding practices.

The remainder of the formula feed consumed, shown in the last column, includes mostly sheep feed, beef cattle feed and also horse and mule feed, pet food, feeds for fur-bearing animals and similar feeds.

"Formula feeds," as the term is used in this report, are feeds mixed specifically for certain species of animals and for certain uses. Formula feed is made according to a specified formula and to meet certain requirements of the animal food for which it is formulated.

This report is the third state-by-state report prepared and published by Feedstuffs.

Illinois Feed and Hatchery Associations Hold Convention

By DON E. ROGERS
Feedstuffs Editorial Staff

SPRINGFIELD, ILL. — The rising trend toward consolidation of farms, with resultant shrinkage in individual customer numbers, was emphasized by a number of speakers at the joint convention Nov. 2-3 of the Illinois Feed Assn. and the Illinois Poultry Improvement Assn.

Statistics were cited to show that more and more small farms are being merged with neighboring farms for more efficient operation under modern mechanical methods. In many instances, these small owners disappear from the farming picture, thus accounting for the steady reduction in farm population and a reduced number of customers.

Feed dealers and hatcherymen were urged to take note of this development and to try for bigger orders for supplies from the fewer, though larger, customers. It was pointed out that the total demand for feed and other farm supplies remains constant, or may even increase as consumer demand for farm products rises with national population growth, but the methods of feed merchandising must keep pace with the trend toward larger farms.

Quintin Siemer, Siemer Milling Co., Teutopolis, retiring president of the feed association, told the feed group that the new state feed and fertilizer control laboratory in Illinois is progressing under the $100,000 budget approved by the state legislature recently. Dedication is expected early in 1956.

The laboratory is expected to correct loose feed control policing and prevent the dumping of inferior quality products into the state from other sources. The Illinois Feed Assn., with assistance from other state agricultural organizations, was responsible for getting the laboratory funds included in the 1955 state budget.

More Boar Testing Stations

Mr. Siemer reported that six boar testing stations in Illinois now are being sponsored by feed companies, with noticeable improvement in swine herd quality. It is hoped that at least six more testing stations will be es-

(Continued on page 73)

Nappanee Milling Gets President, Directors

NAPPANEE, IND.—W. L. Mullett and Walter C. McDonald have been elected to the Nappanee Milling Co., Inc., board of directors, it has been announced by Harold F. Coppes, chairman of the board. The board of directors elected W. L. Mullett, president of the company.

Mr. Mullett's association with the company dates from 1937, when he joined the company as a salesman. In 1947, he was appointed general sales manager, and became general manager in 1952.

Mr. McDonald joined the company in 1947 as office manager and was appointed purchasing agent in 1952.

Five new salesmen have been added to the sales department recently, including Charles Severance, Paul Okuly, Robert Warner, Herb Paxson and Jim [illegible] was announced by Mr. Mull[illegible] Jerry Lantis recently joined the company as field sales supervisor.

CARGILL MANAGER DIES

DES MOINES, IOWA — George Zoch, Des Moines, Iowa, office manager for Cargill, Inc., died recently at the age of 33. Surviving are his widow and four children.

Vaccinated Milk

Two Scientists Report on Immunity To Disease Through Drinking Milk

MINNEAPOLIS—"Protective milk" might be another major step forward in man's never-ending struggle to conquer disease. In what may be one of the most important medical advances in history, a new principle for controlling diseases caused by bacteria or viruses has been developed.

Two University of Minnesota researchers announced Nov. 8 the results of their almost 10 years of study which have led to their "protective principle in milk," and they are convinced that their new principle will immunize human beings against such diseases as streptococcal infections, measles, smallpox, diphtheria, tuberculosis and others. They also believe their "protective principle" will apply not only to diseases caused by viruses and bacteria but also to those which result from certain molds and fungi, pollen and dust.

Dr. William E. Petersen, in Minnesota's Institute of Agriculture dairy husbandry department, and Dr. Berry Campbell, in the university medical school anatomy department, are the men who have developed the new theory of immunizing men and animals against a wide range of diseases. A report on their work was published in the November issue of Journal-Lancet, official publication of several midwest state medical societies.

The experimental work has proceeded to the point where a pilot herd of cows is now being established to test on a larger scale the conclusions reached thus far. The American Dairy Assn., which conducts a farmer-financed program of research, public relations, advertising and merchandising, is providing the funds to carry out the present stages of the testing.

In their experiments, which began in 1946 in the form of fundamental research to study the antibody and gamma globulin production in the cow's udder, the two men have injected vaccines for disease-causing viruses and bacteria into the udders of cows and have learned that the cows will manufacture large quantities of antibodies to the injected material. Vaccinating the cows, in other words, would make it unnecessary to vaccinate human beings who consume the stipulated amount of protective milk. Passive immunity would be maintained in the person drinking the milk as long as he continued to consume it.

The production of immunity factors in the cow's milk does not alter the composition of the milk or make it unnatural or abnormal milk in any way, the research men state. No disease producing organisms are introduced into the milk.

While they are fully confident of the ultimate success of their experimental work, Drs. Petersen and Campbell state that considerable work remains to be done before the protective milk principle will be available for public use.

The first reaction of dairymen across the nation was one of cautious optimism. "If it works," one industry representative said, "milk could become a pure health drink."

Oilseed Meal Output Increases

WASHINGTON — Total U.S. production of oilseed cake and meal in September was 719,088 tons, more than 110,000 tons greater than August production. Production of soybean cake and meal dropped in September while cottonseed and flaxseed cake and meal output increased, according to the report on fats and oils from the Bureau of the Census, U.S. Department of Commerce.

Production of soybean cake and meal in September totaled 429,523 tons as compared with 458,557 tons in August. Cottonseed cake and meal output jumped from 103,409 tons in August to 233,349 tons in September, while flaxseed cake and meal production went from 46,759 tons in August to 56,216 tons in September.

At the end of September, cake and meal stocks on hand at crude oil mill locations were as follows: 37,151 tons of soybean as compared with 69,232 tons the month before; 150,240 tons of cottonseed as against 169,703 tons the end of August, and 3,916 tons of flaxseed as compared with 5,739 tons a month earlier.

Continental Grain Elevator Burns

PLAINVIEW, TEXAS—Fire which broke out late Nov. 5 destroyed a Continental Grain Co. elevator here. Close to half million bushels of wheat burned in the blaze which was out of control for about five hours. Capacity of the house is 500,000 bu. Additional grain was piled on the ground surrounding the elevator as a result of the recent milo harvest and lack of sufficient boxcars.

GRAND OPENING

GREEN ISLE, MINN. — A grand opening was held here by the feed store purchased recently by Harlan Jensen and Homer Abrahamson from Wally Uecker.

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Millfeed Production Falls Again

Production of millfeed in tons for week ending Nov. 4, and prior two weeks, together with season total of (1) principal mills in Nebraska, Kansas and Oklahoma and the cities of Kansas City and St. Joseph; (2) principal mills of Minnesota, Iowa, North and South Dakota and Montana, including Minneapolis, St. Paul and Duluth-Superior; (3) mills of Buffalo, N.Y. Production computed on the basis of 72% flour extraction.

	Southwest* Weekly production	Southwest* Crop year to date	Northwest* Weekly production	Northwest* Crop year to date	Buffalo† Weekly production	Buffalo† Crop year to date	Combined** Weekly production	Combined** Crop yr. to date
Oct. 31-Nov. 4..	25,218	466,936	15,093	252,978	10,449	140,854	50,760	860,768
Prev. week	236,704		215,443		16,967		469,114	
Two wks. ago ..	27,957		15,263		12,984		56,304	
1954	23,818	456,816	14,401	246,596	12,180	193,594	50,319	896,304
1953	23,103	446,480	15,686	266,397	11,300	187,321	49,967	900,698
1952	26,449	471,974	16,171	284,610	10,398	284,438	53,018	1,041,019
1951	25,485	476,492	15,964	168,699	9,091	136,689	49,540	831,881

*Principal mills. **74% of total capacity. †All mills. ‡Revised.

Twin City Nutrition Seminar Is Nov. 15

MINNEAPOLIS—"Forage in Dairy Herd Rations" will be the subject of the Twin City Nutrition Seminar which will meet at 8 p.m. Nov. 15 in Peters Hall on the University of Minnesota St. Paul campus.

Speakers and their subjects will be as follows: Dr. Frank M. Crane, Land O' Lakes Creameries, Inc., "Review of Forage Symposium of Recent Dairy Science Meetings"; Clifford L. Wilcox, graduate assistant in the department of dairy husbandry at the university, "Pasture Utilization Experiments at the University of Minnesota," and Dr. Rodney A. Briggs, associate professor and extension agronomist at the university, "Recent Research and Current Problems in the Production of Silage."

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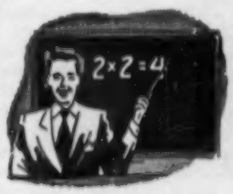

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MIXERS' PULVERIZED OATS
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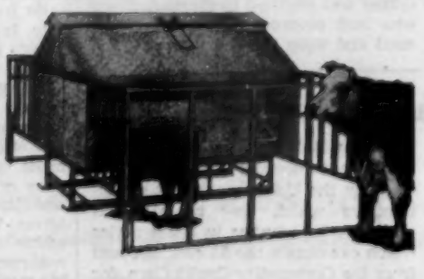

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Renderers Hear Prediction of Sharp Rise in Animal Fat Use

By HENRY S. FRENCH
Feedstuffs Editorial Staff

CHICAGO—The feed industry will provide an expanding market for animal fats and proteins for the next several years, says W. E. Glennon, president of the American Feed Manufacturers Assn., Chicago. From an estimated 200 to 300 million lb. of fats currently being used in the production of formula feeds, it is possible that an annual usage of fats will rise to the 800 million lb. mark in three or four years. Animal proteins, he said, will hold their important position.

This prediction was made by Mr. Glennon when he appeared as a guest speaker at the 22nd annual convention of the National Renderers Assn., meeting at the Hotel Bismarck in Chicago Nov. 7-8. More than 300 delegates—a new record—attended.

As the program unfolded, it became apparent that the NRA is determined to make Mr. Glennon's forecast come true, and to attain even broader horizons. The theme of the convention centered around the role of the NRA in promoting the products of the rendering industry through research, insistence on quality and advertising.

John J. Hamel, John J. Hamel Co., Birmingham, Mich., retiring president of the NRA, in his annual report, outlined the progress of several research projects financed by the organization. He said the information being developed by the program will provide a factual background on animal fats and proteins to furnish material for further promotion designed to expand markets.

Officers Elected

Richard B .Mortimer, Peterson Manufacturing Co., Los Angeles, elected as the new president of the NRA at the meeting of the board of directors, promised that the recently instituted research programs and promotional activity of the association will continue. He said the search for quality products to be sold at a price which will justify their use in the manufacture of finished materials will go on unabated.

Other officers elected at the meeting were: Ralph Van Hoven, the Van Hoven Co., St. Paul, Minn., first vice president; Martin J. Rubin, H. M. Rubin Co., Long Island City, N.Y., second vice president; and Miss Jamie C. Fox, Chicago, secretary-treasurer. Mr. Hamel was named the executive director. Roger E. Morse, James F. Morse & Co., Boston, Mass., served as chairman of the nominating committee.

During his remarks, Mr. Glennon said the addition of animal fats to formula feeds has been one of the more interesting developments of the last few years. He attached considerable significance to the feed industry in the trend, since fats give increased energy to feeds, greater palatability, provide a better appearance, help in controlling dustiness and serve as an aid to pelleting.

Dr. Max H. Thornton, Midwest Research Institute, Kansas City, Mo., during the program proper, talked of research and industrial progress. He attributed the fact that the economy of the country is at an all-time high to industrial research. The research laboratory, he said, has become an integral part of industry operations, and is deeply involved in planning and management policy decisions, as well as in technical work.

Dr. E. R. Barrick, North Carolina State College, Raleigh, N.C., reported on feeding studies for the evaluation of animal by-products. He said that rapid acceptance of low cost animal fat as an ingredient in animal feeds after sufficient research was conducted to show its value is a good example of the use of an available ingredient to make more efficient rations.

Pigs Can Utilize Fat

Work with swine, he said, has shown that the pig has the ability to make efficient use of animal fat added to the diet. The use of 10% fat in rations for growing fattening swine has reduced the feed required for 100 lb. of gain by an average of 60 lb. or approximately 17%. Although this is more fat then would normally be added to the feed it does demonstrate the pig's ability to utilize fat. Carcass studies have shown that carcasses of fat fed animals have not been appreciably fatter than those of the control animals which were fed diets without added fat except in those instances where the added fat resulted in a marked increase in rate of gain.

Recent studies have shown that swine will also perform well on diets very high in fat (41% animal fat)

(Continued on page 73)

Minnesota Poultry Convention Planned

MINNEAPOLIS — A cage laying panel and a talk on poultry feeding progress will be some of the highlights of the 28th annual convention of the Minnesota Poultry Hatchery Assn. to be held Nov. 15-17 in the Hotel Radisson here.

The afternoon of Nov. 15 will feature the program of the Minnesota Poultry Improvement Board. Dr. L. E. Jenkins, assistant secretary of the Minnesota Livestock Sanitary Board will speak on "Eradication of Pullorum and Typhoid in Chickens and Turkeys."

One of the main topics will be "Cage Laying—Practical or Fantasy." Participating in the panel will be Dr. Elton Johnson, professor and head of the poultry section, University of Minnesota; Dave Martin, sales manager, Pillsbury Mills, Inc., Minneapolis; Prof. D. F. King, head of poultry husbandry, School of Agriculture and Agricultural Experiment Station, Auburn, Ala., and several farmers who have cage laying operations.

Nov. 16 will be devoted to the annual business meeting of the association and special reports.

On the afternoon of the final day, Dr. Paul Waibel, nutritionist at the University of Minnesota, will outline "Fifty Years of Poultry Feeding Progress—1905-1955." A live exhibit and demonstration will be used by Dr. Waibel.

The final subject for discussion will be non-specific enteritis or bluecomb disease and internal parasites of chickens. Participating will be Dr. Ben Pomeroy, professor and head, division of veterinary bacteriology, University of Minnesota, and Dr. K. B. Kerr, helminthologist, Dr. Salsbury's Laboratories, Charles City, Iowa. Dr. Kerr's talk will deal with newer approaches on the control and prevention of parasites of chickens and turkeys.

R. W. Waite, Jr.

R. W. Waite, Jr., Heads Dannen Feed Division

ST. JOSEPH, MO.—The appointment of R. W. Waite, Jr., Atlanta, as a vice president of Dannen Mills, effective Nov. 15, has been announced by Dwight L. Dannen, company president. Mr. Waite will head the firm's feed division.

In that post he will concentrate generally on sales work, devoting much of his time to merchandising plans and policy and distribution of Dannen feeds and products. The feed division includes the sales, research, advertising, transportation and sales warehouse departments.

For the past 15 years Mr. Waite has been associated with the Ralston Purina Co. For the last four years he had headed the firm's southern division at Atlanta. He is a native of Waterloo, Iowa, and a graduate of the University of Iowa.

Oil Meal Futures at Memphis Gain, Lose

MEMPHIS, TENN. — Marked by dull, featureless trading, the protein oil meal futures market backed and filled in a fairly narrow range last week on the Memphis Board of Trade. Volume of trading was termed limited and the open interest posted both gains and losses.

Early in the week the market was somewhat higher on speculative buying and higher bean prices. Then it fell off. December, especially was under pressure, losing in relation to the more deferred positions. This was a reflection on the soft condition that exists in the nearby cash oil meal market, dealers reported.

The production of oil meal was said to be running well ahead of demand, with the feed business called poor to slightly improved in some lines. The October crush of soybeans was probably the largest October crush on record.

Speculative long liquidation met only scale-down support, and some selling was credited to merchandisers who had covered sales in cash oil meal and were removing hedges.

Drouth Relief Program Remains Active

WASHINGTON — The government surplus disposal program—an aspect of which has been dubbed the drouth disaster program is creeping on in its course.

After the recent disclosure that 15 scattered counties in five states had been added to the drouth relief program for this year it was learned here this week that a sliver of southern Matheur County in southern Oregon had also been appended to the drouth disaster county list.

All of this makes for unsettled competitive conditions across geographical political lines within states or across states.

A few counties were withdrawn from drouth disaster designation last week by the U.S. Department of Agriculture which now reveals that there are 71 counties in seven states which can obtain the $1 cwt. discount from the Commodity Credit Corp. for whole grains or the equivalent when contained in manufactured feeds.

The USDA, in making this announcement, adds a sympathetic note to the feed industry when it reports that at this time last year there were 918 counties in 17 states eligible for participation in the drouth disaster program.

OILSEED MEALS

(Continued from page 1)

will cause the vegetable protein meals to be priced at a level wherein they will be consumed.

These opinions seem to indicate a soybean meal price later in the low range of the $40 a ton and soyoil at approximately 1@1½¢ lb. higher.

The one common denominator of agreement is that the price of edible oils and lard will dominate the meal market.

While some trade and government optimists are openly insisting that there will be no meal surplus, they fail to state this one important item on the basis of a 372 million-bushel bean crop plus some yet to be announced government carryin of old crop beans there must be a substantial into-loan movement of beans and a government holding of surplus at the end of the current crop year.

Let's examine the trade and government estimates: a new crop of 372 million (carryin not announced), a potential crush of 260 million, an export movement of as high as 75 million bushels, and seed requirements for a new crop at not less than 30 million. That would save a carryout at the end of September, 1956, of about 7 million bushels plus the carryin for this year of approximately 10 million bushels, making a government holding on Sept. 30, 1956, of nearly 17 million bushels.

Of course, that analysis is based on a potential crush of 260 million bushels. But what about competitive protein substances—animal proteins and fish meals or urea. The animal protein supply will undoubtedly be large as the animal slaughter increases. Fish meal products must not be discounted as a competitive source of supply. There are grave doubts that the soybean crush will attain a 260 million bushel level.

Offsetting the trade and government opinions that the U.S. can consume every pound of vegetable protein available is an opinion of an informed government official who advances count on a world-wide supply basis for vegetable proteins.

This source says that the world can consume all the resultant edible oil and lard from a total crush of all available vegetable oil sources, but if that condition should occur, there will be a world surplus of 1 million tons of vegetable protein meals which cannot find a home. He says there are just not that many animal units in the world to absorb the meal supply.

On balance the proponents of total consumption of vegetable protein meal seem to have the floor. They say that high oil prices will make meals a lower priced product, contending that all vegetable protein meals will find a home at a price, notwithstanding the price of corn or sorghum grains.

An unknown in this problem is the export market for oils and lard. Public Law 480, with its generous sales terms, obviously may stimulate our edible fats exports. Although export sales for edible U.S. fats are draggy now, it is by no means an index of what's ahead. Any day the dam may break.

A point worth deep consideration is that the USDA has no available uncommitted vegetable oil stocks it can offer for export, yet USDA has made available private trade supplies of cottonseed oil, soybean oil and lard for export under PL-480 terms. When the dam breaks on the edible oil export demand, the whole controversy over the price of vegetable meals may be clarified over night.

What is holding back this entire market situation is the uncertainty of foreign buyers over final U.S. sales terms. Possibly a clear policy statement by USDA now may clean the slate and put the feed industry on a sound course wherein it can make justifiable commitments for oilseed meals now.

Do you have the facts on these profit-building supplements from Du Pont ?

THESE QUALITY PRODUCTS for animal health and nutrition are offered by the Grasselli Chemicals Department of Du Pont. By adding to the efficiency of today's feeds, they are a profitable sales factor in many formulations. For full details on their value in *your* line of feeds or medicines, write to the nearest Grasselli Sales Office.

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This is a *new* opportunity. New research shows products containing Phenothiazine control worm parasites in beef cattle and young dairy stock. Pheno controls more worm parasites than any other known drug—application of low-level feeding now makes it a really important factor in increasing livestock profits.

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"Delsterol" is the exceptionally stable source of vitamin D_3 made by Du Pont. In the 16 years since its introduction, every pound of "Delsterol" assayed by regulatory officials has been reported guarantee sustained.

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Sodium propionate is effective for prevention and control of ketosis (acetonemia) in dairy cows. This product, produced as a compound of drug quality by Du Pont, permits feed manufacturers to offer a valuable new service to the nation's dairymen.

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Feed grade anti-oxidant

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Build up demand for your feed mixes by adding the blood "builder-upper" minerals—iron and copper! Tamms is a pioneer in high grade oxides of iron—now also offers manufacturers of feed a unique blend of iron and copper sulphate.

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Growing and breeding animals, as well as poultry, need adequate supplies of iron in their daily diet. This high quality Red Oxide has an extremely high iron potency.

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Tamms Iron Oxides are free of injurious impurities such as lead, fluorine and arsenic—contain no harmful ingredients. Certificate of analysis furnished upon request for all Tamms Oxides.

IRON-COP MINERAL BLEND
First mineral combination of its kind offered to feed manufacturers. By blending Tamms Red Oxide of Iron with high-grade copper sulphate in proper nutritional proportions, the blood-building, health-promoting function of the iron is greatly increased.

Iron-Cop is thoroughly mixed and milled to assure maximum utilization—eliminates need of running both of these essential minerals through a feed mixer; avoids danger of copper elements forming pockets in the feed.

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UNCLE TOM'S FEED FABLES

I was just sittin' around the hotel lobby the other night when young Tim Jenkins came over and sat down beside me. Tim, a good young cattle feeder, had something on his mind, I could tell, and pretty soon he told me what it was. Stilbestrol had him all up in the air. A letter he had said the stuff was no good, it would make all the sows lose their pigs and guys at the packers were docking stilbestrol-fed cattle and that even a man feeding it might be affected.

The letter even went on to repeat the story that I have heard my old friend, Bill, out in Colorado tell as a joke about what happened down in Jackson, Miss. He said they used to put these stilbestrol pills down a rooster's neck so they would get capons, and then according to government rules, they had to cut off the chicken's head a certain length of time before the birds were packed, and that this packing plant gave all these necks and heads to the men who worked in this factory. According to this letter, they just didn't have any more "Pickaninnies" down in that part of Jackson and they even had to disband the street corner quartets, because the basses were now singing tenor. I did my best to explain to Tim that Uncle Sam had been pretty careful about okaying this stilbestrol program, and when all the biggest companies in the country were building such a product, I thought it was O.K.

Tim agreed, but asked, "Why is this company putting out stuff of this kind?" I said, "Well, Tim, it reminds me of something I remember about when I was a kid. I went into the grocery store with Mother and she asked him how much his peaches were, and he said $1.50 a bushel. She said, "For heaven's sakes, Jones Bros. down the street are advertising the same peaches for $1 a bushel." He said, "Why don't you buy your peaches there?" Mother said, "He doesn't have any more." The grocer said, "Well, lady, when I don't have any peaches, I'll price them to you at 75c a bushel."

Uncle Sam isn't taking any chances. Every company that puts stilbestrol in feed has to have a federal license and they check them over pretty carefully.

Pfizer Common Stock Dividend Increased

NEW YORK—The board of directors of Chas. Pfizer & Co., Inc., has voted to increase the quarterly dividend rate on the company's common stock to 35¢ per share, a 10¢ increase over the previous quarterly rate.

The directors also voted an extra dividend of 45¢ per share on common stock, 10¢ greater than a similar year-end declaration in 1954.

Both common dividends are payable on Dec. 9 to stockholders of record on Nov. 15.

The board declared the usual dividend of 87½¢ per share on the 3½% cumulative preferred stock and a regular quarterly dividend of $1 per share on the 4% second-preferred stock, both payable Dec. 28 to stockholders of record on Dec. 7.

Livestock Hard Hit

RENO, NEVADA — Cattle and sheep herds in northern Washoe, Land and Eureka counties, Nevada, are hardest hit by feed shortage, and stockmen are blaming summer drouths for the serious shortage.

Central Nevada will fare somewhat better, but even there the grazing lands are reported not well supplied with feed and will not hold up if overstocked. Southern counties are said to be in good shape.

AT LAST! A rugged 12x15 mill at LOW COST
New ROSS "MIGHTY MITE"
Steps Up Milling Profits!

- Crimps all grains, oats, corn, barley, milo, etc.
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The new Ross Mighty Mite weighs 1800 pounds, has solid chilled iron rolls with Ross Long Life special crimp corrugations. It features an enclosed chain differential drive, Timpkin Taper bearings, micro-adjustment, positive tram and shear washer to protect the rolls. Seamless steel case is made of ¼" and 3/8" plate and is equipped with double inspection doors. Millers report it is excellent for minimum space requirements because of its compact, streamlined design. Write for complete information.

ROSS MACHINE AND MILL SUPPLY, INC.
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ROSS FOR ROLLS

Break the Sales Barrier

POWERFUL

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DEPENDABLE

The modern farmer is a busy farmer. Savings in time and work are important to him. He is interested in modern time and labor saving equipment that helps him lower costs and increase output. He is sold on mobile feed processing service because it saves him time and effort to have his feed ground where feed is fed. CHAMPION Mobile Service breaks down sales barriers and builds up ON-THE-FARM sales.

CHAMPION'S powerful 170 h.p. units are built for smooth, efficient performance with a minimum of moving parts. These all-hydraulic units will outperform any other grinding and mixing units, yet they sell for less than most other makes. With CHAMPION'S big, 110-cu. ft. capacity, and its finer, faster grinding, you spend less time on each job but process more tonnage per day.

The CHAMPION is equipped with a hydraulically driven 14-ft. variable-speed drag feeder. It tilts and swings into any convenient position. Grain, ear corn, or roughage is conveyed from granaries and corn cribs directly into the mill. The processed feed is conveyed right into feed bins or feeders with the hydraulically driven discharge auger. If feed is to be bagged, the auger with bagger attached, is extended into buildings to save rehandling filled bags. Modern farmers appreciate this time and labor saving method.

Profitable mobile milling is based on quick, dependable service, day after day—year in and year out. CHAMPION all-hydraulic units are designed specifically for this modern type of service. Millers equipped with CHAMPION Mobile Units can furnish the farmer with the service he wants—dependable, ON-THE-FARM grinding and mixing service. With a CHAMPION on the road you'll break the sales barriers—and put yourself on the road to better profits.

You can pay more money, but you can't buy better feed grinding and mixing equipment

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CHAMPION mills are backed by 27 years of manufacturing experience

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MILL AND MIXER UNITS

Double Your Tonnage!

Triple Your Profits! WITH

L. to R. Charles Petri, Homer Liebig, Fred Knipping, John Bynum.

Exclusive territory franchises still available in some areas. Some aggressive dealer will double his tonnage in your area with Honeggers' Big "H" Feed Franchise. It might as well be you!

Watch for a series of Ads featuring Good Businessmen who have doubled their tonnage with the Honegger Program.

Southern Feed & Farm Supply
Belleville, Illinois

October 17, 1955

Mr. L. S. Rolf
General Sales Manager
Honeggers' & Co., Inc.
Fairbury, Illinois

Dear Mr. Rolf:

Yes, we certainly have doubled our tonnage and tripled our profits with the Honegger Program. In fact we hope to go over the 200 ton a month mark yet this year.

We are aiming to double our chick sales this year and our Farm Building volume is going up very nicely. We sold over 30,000 Honegger Leghorns last year.

The Honegger Program is the only program we know of that can do so much in so short a time.

Very truly yours,
Southern Feed & Farm Supply

Homer Liebig

HONEGGERS' BIG H FEEDS CAN TRIPLE YOUR PROFITS!

THE HONEGGER PROGRAM

WHAT OTHERS HAVE DONE...YOU CAN DO ALSO; WITH HONEGGERS' COMPLETE PROGRAM

HONEGGER FEEDS

Honeggers' offer a complete line of feeds and complete feeding programs that help increase your tonnage. The Honegger line is a "profit-package" backed by continuous research and a rapidly increasing number of enthusiastic users.

HONEGGERS' "EGG FACTORY"

Each dealer receives a franchise to sell Honeggers' exclusive "Egg Factory" program in his area. This is a plan featuring the nationally famous Honegger Leghorn, the Honegger Poultry House and other Farm Buildings, feeds for all livestock and poultry. What a natural for increasing tonnage and profits! Remember, in only a year's time, 500 birds will eat a carload of feed.

HONEGGERS' LIVESTOCK AND POULTRY EQUIPMENT

With Honeggers' wide variety of dependable livestock and poultry equipment, and accompanying farm supplies, Honegger dealers have a source of supply which features unequalled dealer service. Your customers will come to depend on you as their one-stop dealer for all poultry and livestock programs.

HONEGGER FARM BUILDINGS

Honeggers' line of pre-built farm buildings are an extra profit plus. There's no additional investment on your part . . . and what a perfect tie-in for your livestock and poultry feed business.

Honeggers' modern feed mill near Fairbury, Illinois, features electronic controls for speed and accuracy, with "push-button" ingredient selection and all bulk handling throughout the plant for top efficiency and economy.

The 600 acre Honegger Research Farm, where practical feeding, management and disease control practices are developed and demonstrated. Dealers find that a tour of Honeggers' by customer prospects really helps sell them.

WRITE, PHONE OR WIRE COLLECT FOR COMPLETE DETAILS

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HONEGGER Leghorns

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As a feed dealer, you're in business to make a profit. So it stands to reason that you'll want to sell Sargent MINRAL MEAL, the supplement preferred by successful hog raisers. Sargent MINRAL MEAL—just one of a complete line of Sargent feeds—is a protein and mineral balancer that keeps your customers coming back. Write today for details of our attractive dealer set-up.

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TORNADO THE FASTEST, EASIEST VACUUM CLEANER YOU CAN USE

Now you can buy one vacuum cleaner that will do all of your cleaning jobs easier and faster —keep up with your cleaning and sanitation problems to avoid dangers from fires and losses from vermin and rodents.

The versatile Tornado cleans from floor to ceiling, picks up liquids or dry materials without any conversion at suction speeds up to 325 m.p.h.

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Streamlined design, greater power and easy portability make the Tornado heavy duty blower the most efficient and modern method for cleaning all types of machinery and equipment. Sealed ball bearing motor.

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Oklahoma Feed Men Told of New Nutrition Developments

STILLWATER, OKLA. — Nationally recognized college and commercial authorities discussed latest developments in poultry, dairy and livestock feeding and management research at the seventh annual Oklahoma Formula Feed Conference Oct. 27-28 on the Oklahoma A&M College campus.

Feed manufacturers, salesmen, dealers and representatives of various agricultural industries heard talks on such subjects as protein quality in formula feeds, use of urea in ruminant rations, dairy cattle feeding practices, and the use of estrogens in feeding poultry.

A liberal dietary supply of protein is necessary throughout the life of animals because body protein is continuously being replaced, said Dr. Allen D. Tillman, associate professor of animal husbandry at Oklahoma A&M. The animal producer has the problem of supplying a generous supply of protein in the most economical way. Shortages of protein have served to decrease the potential supply of animal products, he said.

Urea for Ruminants

In his discussion of "Urea in Ruminant Rations," Dr. Tillman said urea is very stable in the body and as a result has no value to the simple-stomach animal. But, he noted, the ruminant animal can utilize urea as a source of nitrogen.

Urea is a non-protein nitrogen compound, and in its pure form contains 46.67% nitrogen. Most of the feed grades are diluted with some non-hygroscopic carrier and contain about 41.92% nitrogen, giving a protein equivalent of 262%. Most people regard urea as an abnormal constituent of natural feedstuffs. Recent work of the Kansas station shows that urea is a constituent of natural feedstuffs, Dr. Tillman said.

Sun-cured alfalfa hay and oats have about 4% of their nitrogen in the form of urea. Other feeds contain lesser amounts with the oil meals containing about 0.25% of their nitrogen in this form. Ruminant animals also recycle urea by returning it, via saliva, to the rumen. It is estimated that cattle may recycle as much as 0.02 lb. of urea daily in this manner, he said.

The crude protein content of a feed is obtained by determining the nitrogen content and multiplying the nitrogen by the average protein factor (6.25). Obviously, then all nitrogen in a feed is considered as protein and this does not represent the truth. Natural feeds contain, in addition to urea, free amino acids, certain amino acid combinations, amides and minor amounts of nitrates and other water-soluble nitrogenous substances, all of these being classified as non-protein nitrogen compounds, Dr. Tillman said.

Points Listed

The speaker said the following points stand out when a review is made of past studies and literature: (1) When urea is used to replace the oil meals, the new ration must be evaluated in reference to its energy and minerals content. A deficiency of energy and/or one of the various mineral elements definitely lowers the utilization of urea. In this connection, one could suggest that urea be used in "good" rations only. (2) A low level of true protein and a high level of starch in the ration favors urea utilization. (3) Highly soluble and readily hydrolysable protein in the ration tends to depress the utilization of urea. (4) Sugars and cellulose are inferior to starch as sources of energy for the microflora: however, a mixture of sugar and starch supported satisfactory conversion in certain experiments. (5) Urea has no value in rations of simple stomached animals. (6) Urea is somewhat inferior to the conventional protein supplements as a source of nitrogen for growth of beef cattle. (7) For fattening cattle, the value of urea is somewhat less when urea is fed at levels higher than 25% of the nitrogen of the total ration or supplying 50% of the nitrogen in the protein supplement. (8) For fattening lambs, the results are confusing. (9) Urea is a satisfactory substitute for about one third of the nitrogen in the rations of ewes during gestation or lactation. (10) For the lactating cow, urea can satisfactorily be used at levels of 1% of the total ration or 3% of the concentrate ration. (11) There is evidence indicating that frequent feedings stimulate urea utilization.

Dr. Tillman listed the following conditions which may predispose cat-

● Christie's Spizzerinktum New Hampshires, the strain that made the breed famous, is still looked up to today as the only source of pure, unadulterated New Hampshires in the country.

You'll find that Christie New Hampshire females are free of the dark whiskers and black pinfeathers that interfere with top market prices for your meat flocks. Continued breeding effort and constant improvement for egg production, hatchability, disease resistance and unexcelled pickability have made them the favorite choice for crossing with any of today's leading meat-type males.

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Reports from broiler areas point up the fact that Christie's Granite Whites are turning in a terrific job in fast weight gains, excellent feed conversion and fine dressing-out qualities. Hatchability is high and flock owners report that the females have no equal for consistent high egg production, interior quality or large egg size.

Excellent pickability with Christie White Cornish males, or with any other well-known recessive or dominant white, full or part Cornish males.

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tle to disturbances due to consumption of urea-containing feeds: (1) Starved or fasted cattle. These animals will consume large amounts of urea-containing feed in a very short period of time. (2) Animals previously fed low quality roughages will readily consume urea-containing rations. (3) Rapid consumption of urea-containing feeds by aggressive animals. (4) Animals which have not been previously fed urea-containing feeds, will readily consume enough urea to cause acute toxicity. The farmer should be cautioned in regard to this point. (5) Feeds containing urea in amounts larger than recommended by feed control officials. (6) Animals receiving urea with high roughage type rations utilize urea poorly and are more susceptible to toxicity.

Feeding Dairy Cattle

Over-feeding of dairy cattle was found to be more common than under-feeding in Oklahoma, said Dr. Mangar Ronning, associate professor of dairy production at Oklahoma A&M. In his talk on a "Survey of Dairy Cattle Feeding Practices," based on a survey taken last year by the dairy extension service and the department of dairying, Dr. Ronning said only 13% of the participaing dairymen were feeding less than required amounts of energy while 47% were feeding at an adequate to liberal rate. The remaining 40% of the operators were over-feeding, with eight of these individuals feeding twice as much energy as needed by their cows. Since feeding practices during this period were tempered by extreme drouth conditions and shortages of feeds, especially roughages, it was anticipated that under-feeding would be prevalent.

A high rate of grain feeding seemed to be the primary factor responsible for over-feeding. Nearly one half of the dairymen who were feeding more than the required amount of energy, fed 1 lb., or more, grain per pound of milk produced. The grain-milk ratios narrowed as the seriousness of over-feeding increased, he reported. Only 3% of those dairymen feeding at reasonable energy levels fed grain at the rate of 1 to 2, while over 50% were feeding 1 lb. or less grain per 3 lb. of milk produced, he said.

The high rates of grain feeding could not be justified entirely on the basis of low roughage supplies.

Too Much Protein

A startling figure was the marked over-feeding of protein. Under the drouth conditions prevailing last year, high protein feeding was especially disturbing since it involved a high percentage of purchased protein, including purchased hay as well as common protein supplements, he said.

Fifty six per cent of the dairymen fed from one fourth to twice as much protein as required while another 16% fed from two to three times as much as needed, Dr. Ronning stated. Only 8% of the farmers surveyed fed less protein than required and most of these were not under-feeding seriously. Most of the operators feeding protein at reasonable levels were using combinations of legumes and non-legumes in their roughage programs. As protein feeding rose above recommended levels, there was an increased number of farmers depending entirely on legumes for their roughage. To complicate this further many of these men were using concentrate mixtures which contained unreasonable amounts of protein, he said.

He pointed out that unbalanced rations appeared to be the rule rather than the exception among the dairymen surveyed. Only about one fourth of the dairymen feeding reasonable levels of energy had well balanced rations, and only one fifth of those which were over-feeding. This shows, Dr. Ronning said, that the high rate of protein and energy feeding was not influenced by liberal offering of balanced rations, but that protein and energy were being supplied independently in most rations.

The starting point for improving the situation is a rigid culling program, Dr. Ronning said. Too many of the herd averages were seriously low where the liberal feeding conditions were taken into account. There was indication of the presence of numerous loafing producers that deserve but little, if any, of a dairyman's feed. A sound, workable performance-testing program is a prerequisite for both effective culling

(Continued on page 66)

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The most complete line of DOG FOOD ingredients

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expeller, pea size
CORN KIB-LETS
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CORN FLAKES
cooked . . . toasted
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WHEAT FLAKES
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EXPELLER SOY BEAN MEAL
and other ingredient specialties

Nowhere else can you secure such a major part of your dog food ingredients. By combining your ingredient purchases in cars, mixed cars or LCL you are assured of freshness, and better inventory control with lower inventory investment. BOXER ingredients are manufactured by us specially for dogs—they are "prime" products, and not "by-products." Write for current prices and literature.

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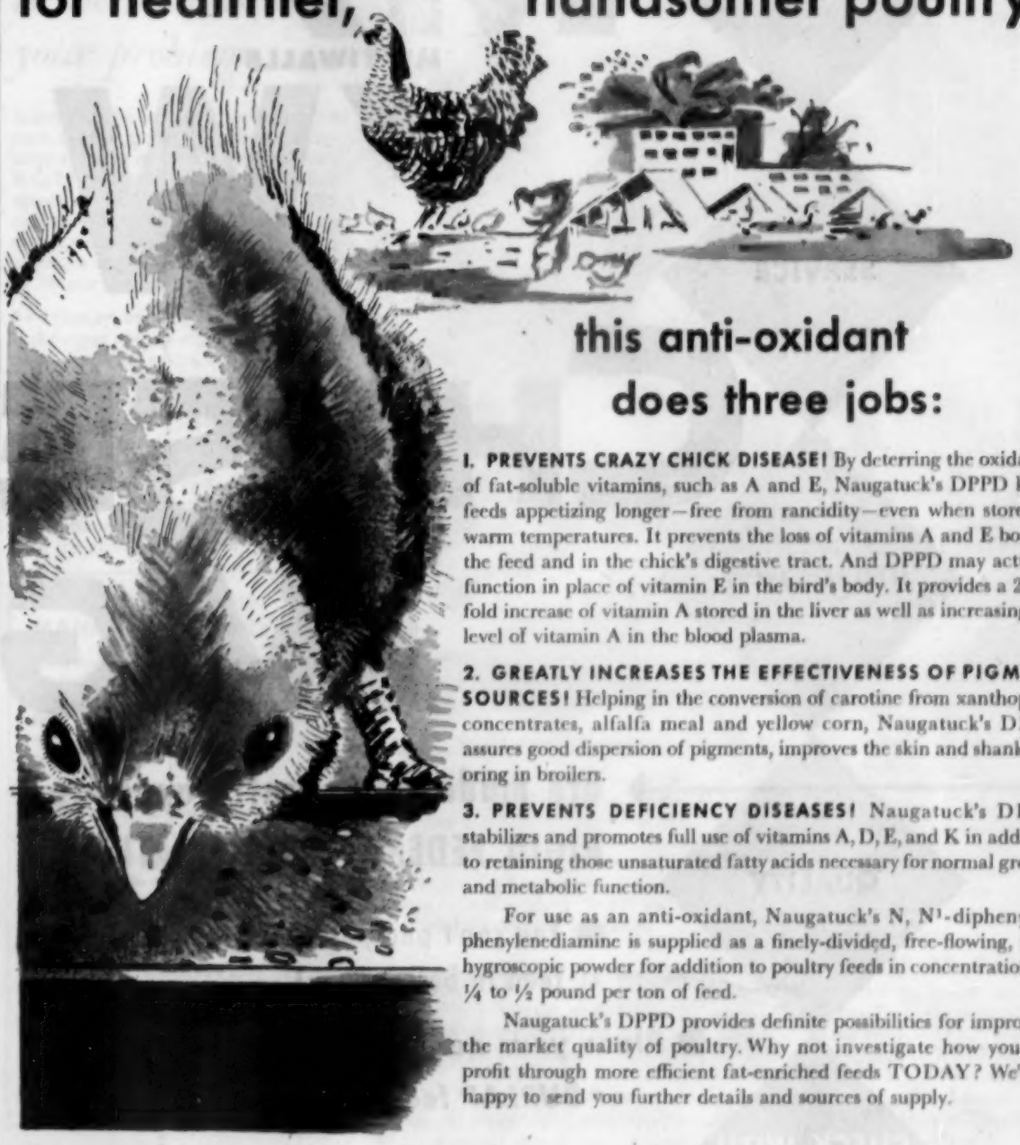
MONMOUTH, ILLINOIS

Use Naugatuck DPPD
for healthier, handsomer poultry



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3. PREVENTS DEFICIENCY DISEASES! Naugatuck's DPPD stabilizes and promotes full use of vitamins A, D, E, and K in addition to retaining those unsaturated fatty acids necessary for normal growth and metabolic function.

For use as an anti-oxidant, Naugatuck's N, N^1-diphenyl-p-phenylenediamine is supplied as a finely-divided, free-flowing, non-hygroscopic powder for addition to poultry feeds in concentrations of ¼ to ½ pound per ton of feed.

Naugatuck's DPPD provides definite possibilities for improving the market quality of poultry. Why not investigate how you can profit through more efficient fat-enriched feeds TODAY? We'll be happy to send you further details and sources of supply.

Naugatuck Chemical
Division of United States Rubber Company
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producers of seed protectants, fungicides, miticides, insecticides, growth retardants, herbicides: Spergon, Phygon, Aramite, Synklor, MH, Alanap, Duraset.

Pre-Starter and Starter Rations For Young Pigs

By Dr. H. D. Wallace
University of Florida

The nutrition of the very young pig has been a long neglected phase of swine research. Only during the last five or six years, coincident with greater emphasis on early weaning, has the young pig been given much research time. And even today after dozens of recent experiments we find many gaping holes in our knowledge. Much remains to be learned in this presently active field of swine research.

Let us briefly review recent happenings in the field. The introduction of antibiotics in 1950 ushered in a new era in the nutrition of the young pig. Artificial liquid milk had been used in studies at Illinois and other stations prior to this time. However, the antibiotics, more than any other one thing, made it seem feasible to formulate commercial artificial milk for early weaned pigs. Pig hatcheries sprang up all over the country. This business has been characterized by a few successes and numerous failures. Artificial liquid milks were not widely accepted. The reason was not one of nutritional inadequacy. The main difficulties were management, labor costs, sanitation, etc. They were not a practical answer to the need.

Today the emphasis is on dry meal formulations with a trend away from the liquid formulas. We are still searching for some of the answers to early weaning and attempting to formulate pre-starters and starters which will retire mama hog early in lactation with a greater profit to the swine producer. Feed formulation represents only a part of the problem, but an extremely important part.

A good place to "tee" off in this discussion might be with a look at the problem as it confronts us. What are we proposing to make pre-starters and starters do? We have long recognized that the pig has a tremendous inherent capacity to grow. We also recognize that the maximum capacity to grow is seldom realized. As a matter of fact, it is clearly evident that growth is actually limited during at least a part of the suckling period due to the lack of sufficient milk. This is graphically shown in Figure 1.

EDITOR'S NOTE: Dr. H. D. Wallace of the University of Florida department of animal husbandry and nutrition reviews recent developments in baby pig nutrition in the accompanying article. He describes points to consider in working out feeds for the young pigs, outlining various research findings. Included in the review are the results of some palatability studies at the Florida Station. This article was prepared by Dr. Wallace on the basis of a talk at the 1955 Georgia Feed Conference.

Points of Interest

These curves illustrate some points of considerable interest. First, it is apparent that the sow reaches maximum milk flow at about three weeks after farrowing. This peak may come somewhat later for certain sows, but the trend is usually downward by the fourth week. The weekly gain curve follows the milk flow curve for the first five weeks. Thus, there is a period of at least two weeks during which the growth of the pig is limited. The creep ration, although admittedly inadequate in this case, did not replace the deficient milk supply until late in the suckling period.

A greater persistency of milk flow by sows would be desirable but would not represent a practical answer to the problem. The pig needs not only a constant supply but increasing amounts of suitable nutrients. It can be seen then that pre-starters and starters must do two things. First, they must provide the required nutrients, and, second, they must be highly palatable so as to induce heavy consumption.

What does the young pig require in terms of nutrients? Table 1 gives the grass composition of normal sow

Table 1. Composition of Sow Milk

	Total composition	Per cent of dry matter
Water	83.0	...
Protein	6.2	34.4
Fat	6.8	37.8
Lactose	4.0	22.2
Ash	0.86	5.3

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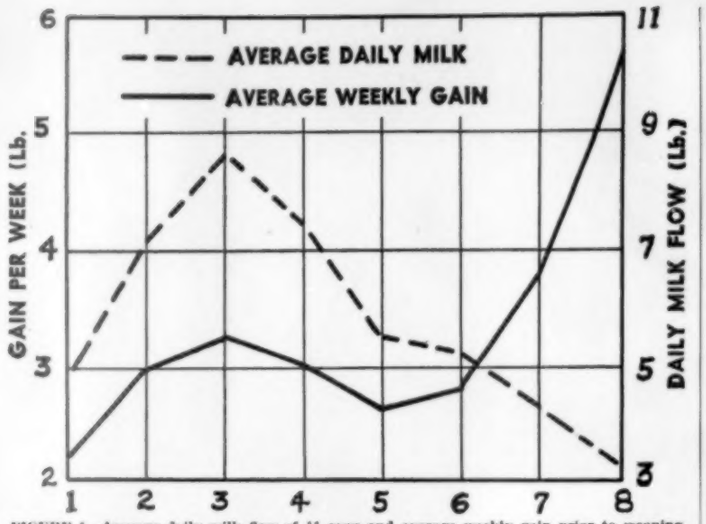

FIGURE 1—Average daily milk flow of 11 sows and average weekly gain prior to weaning of 393 pigs. Creep fed corn and tankage or corn and dried skim milk. (Comstock et al, J. Ag. Res. 65:382. 1942.)

milk. Sow milk is very high in protein and energy. This is of real significance and must be borne in mind when formulating pre-starters. In addition to the nutrients listed in Table 1 sow milk is packed with varying quantities of the many vitamins. The ash contains essential mineral elements. Undoubtedly unknown growth factors are also present. It is truly a potent feed, but the old sow just doesn't produce enough of it.

Plenty of Protein

Plenty of high quality protein is of prime importance in the formulation of pre-starters. The optimum level has not been clearly defined. One of the most widely publicized pre-starters, Iowa State College Pre-starter, contains 24%. The protein is provided by sources such as dried non-fat milk solids, and high quality soybean meal and fish meal. A further examination of this mixture reveals that it is loaded with energy. Five percent lard, 15% corn sugar, and 5% cane or beet sugar provide an abundance of energy which the young pig needs. These ingredients are also very valu- from the standpoint of palatability. Vitamins, minerals, antibiotics, and sources of unidentified growth factors constitute the remainder of the mixture. It is an extremely complex formula. The ingredients are expensive and must be carefully blended. The

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The second factor is the ability of these feeds to stimulate appetites. By stimulating appetites, as well as killing the secondary invaders, a high-level feed enables livestock to combat more successfully diseases such as blue comb, infectious sinusitis, non-specific enteritis, air sac and infectious swine enteritis.

The true measure of antibiotic effectiveness is selective activity

Big game hunters say that a cheetah, on the prowl, selects as his prey one animal from a herd, and ignoring all others, pursues that one until he brings it down. In a similar way, antibiotics attack and kill specific harmful bacterial organisms, without injuring beneficial bacteria or retarding the proper development of body tissue.

This fact becomes important when you realize that most of the bacteria that surround us are beneficial or neutral. Relatively few are disease-producing.

Remember this when you measure the value of an antibiotic – a wide range of activity with poor selectivity is harmful when it destroys beneficial organisms. Antiseptics and disinfectants have the widest range of activity but are not used in feeds because they have no selectivity. They kill the living cells of the host animal as well as all the bacteria with which they come in contact.

Some antibiotics are more selective than others in their action. Bacitracin, for example, is highly active in killing most of the dangerous secondary invaders. These are the bacteria that follow diseases of the respiratory and intestinal tracts. Secondary invaders are the real culprits in the poultry house or hog pen. At the same time, bacitracin stimulates appetites, promotes growth of vitamin-producing intestinal organisms.

Don't wait—it pays to use high-level feeds at the first sign of trouble

Livestock will get the maximum benefit from a high-level feed if they receive it at the very first sign of stress, disease, or other conditions which lower natural resistance, reduce appetite, slow down weight gains or egg production.

Any program of high-level feeding should be preceded by correct diagnosis and then conscientiously pursued with the right remedy.

For best results, a high-level feed should be used promptly in order to fight off secondary invaders, stimulate appetites and hasten recovery.

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2 EXTRA VALUE

...furnishes bonus vitamins

All BACIFERM antibiotic supplements are whole fermentation products. Each contains *selectively-active* bacitracin *plus* naturally-produced B-vitamins, high protein, vitamin K, and unidentified – but known to be present – growth factors.

During disease or stress periods, the extra vitamins in a BACIFERM high-level feed are quite important. BACIFERM stimulates the animal to eat more and bolsters the ration with extra vitamins. This helps assure intake of the required amounts of nutrients essential to disease resistance, tissue repair and rapid growth.

BACIFERM contains these desirable bonus factors and, in addition, costs 30% less than other antibiotic supplements, none of which have all these extra values. For example, forty pounds of BACIFERM-5, enough to fortify a ton of feed with 200 grams of bacitracin, adds the following average bonus quantities:

Riboflavin	2,000.0 mg.	Niacin	3,000.0 mg.
Vitamin B_{12}	3.2 mg.	Para Amino Benzoic Acid	564.0 mg.
Choline	41,000.0 mg.	Vitamin K	1,120.0 mg.
Folic Acid	228.0 mg.		
Pantothenic Acid	5,160.0 mg.		

plus unidentified growth factors
high protein (35-40%)

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Results show that BACIFERM is unexcelled in effectiveness – even by higher-priced antibiotics. On farm after farm, bacitracin has controlled secondary infections, and effectively treated conditions associated with blue comb, nonspecific enteritis, infectious sinusitis, air-sac disease and infectious swine enteritis.

BACIFERM stimulates appetites, keeps animals eating when disease or other stress conditions occur. BACIFERM, a bacitracin antibiotic supplement, gets more poultry and swine to market *faster*, because it hastens recovery and reduces mortality.

PERFORMANCE PROVED ON FARM AFTER FARM

CRD Symptoms Subside Promptly . . . In Mississippi, symptoms of CRD were observed in a flock of 8,500 broilers 6 weeks old. Sneezing and sniffling, some open-mouth breathing, and a dry rattle were noted. BACIFERM was added to the feed for three days at a level of 185 grams of bacitracin per ton and the birds never went off feed or appeared to be set back in any way. Symptoms subsided promptly and did not reappear.

BROILERS!

Marked Improvement in 18 Hours . . . In California, hexamitiasis was diagnosed in a flock of turkeys, 10 weeks old. A competitive antibiotic was fed at extreme high levels for 28 days, with disappointing results. Then BACIFERM, with its bonus vitamins, was added to the feed at a similar level. Marked improvement was noted in 18 hours—enteritis was no longer observed, feed consumption rose rapidly, mortality dropped to levels which are usual in healthy flocks, and the birds were bright and normally active. When the treatment was discontinued, there was no recurrence.

TURKEYS!

Speedy Recovery from "Black" Scours . . . In Indiana, "black" scours hit 207 late spring pigs running in clover pasture. Within a very few days, 22 were dead and about 50 more were in bad shape. A BACIFERM supplement was fed at a level of 1½ pounds per 100 pounds of feed (200 grams of antibiotic per ton). To speed recovery, some BACIFERM was also slurried in the drinking water to get at the pigs who wouldn't eat. The pigs steadily improved, ate more feed, and became more active; their hair became slick and all other signs of health returned.

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formulation of pre-starters is no job for the amateur. The young pig's requirements are very exacting.

Table 3. Palatability of Starter Rations for Suckling Pigs (Illinois, AS418)

Ration:	Average % of total starter consumed Meal	Pellets
20% sugar	38	37
15% sugar	36	16
High dried skim milk	17	29
10% sugar	13	9
5% sugar	5	5
0.05% saccharin	4	4
0% sugar	2	1

Many investigators have been studying the problem of early weaning and all are not in favor of the very early weaning scheme. Workers at Illinois, Ohio State, Minnesota and other stations have conducted numerous tests. Much of the emphasis has been on better starter or creep rations for suckling pigs. Some data from the Illinois station on the preference of suckling pigs for certain feeds are presented in Table 2. In this study pigs showed a definite preference for hulled oats. They ate mixtures containing molasses in greater quantities than feed with no molasses added and preferred pelleted rations to meal.

In another test at Illinois (Table 3) it was observed that the form in which a starter was fed (meal or pellet) affected its choice by the pig. In particular, the degree of preference for a high dried skim milk starter was much greater when it was offered in pellet form than when offered in meal form. There was no significant difference in the performance between the groups of pigs on the meal or pelleted rations.

Table 2. Choice of Feeds by Suckling Pigs (Illinois, AS213)

Feeds offered—	Feed consumed, lb.	Percentage of total eaten
Hulled oats	158.0	43.8
Rolled oats 75%, molasses concentrate* 25%	73.5	20.4
Pig starter ration fed in Lot 2, Experiment 2:		
Pellets	52.0	14.4
Meal	31.0	8.6
Dry skim milk 75%, molasses concentrate* 25%	25.0	6.9
Shelled corn	4.0	1.1
Rolled oats	3.0	0.8
Dry skim milk	3.0	0.8
Meat scraps (55% crude protein)	3.0	0.8
Dry synthetic milk	3.0	0.6
Pig supplement fed in Lot 1, Experiments 1 and 2	3.0	0.6
High-efficiency broiler ration:		
Meal	1.0	0.3
Pellets	1.0	0.3
Ground yellow corn	1.0	0.3
Solvent soybean oil meal (44% crude protein)	1.0	0.3
Solvent soybean oil meal (50% crude protein)	0.0	0.0
Total	360.5	100.0

*Pure cane molasses blended with sugar cane pulp and dried.

Table 4. Palatability Studies on Creep Feed Formulations for Suckling Pigs*

	Experiment 1†							
Ration No.	1	2	3	4	5‡	6	7	8
Ground yellow corn	46.0	...	...	33.0	33.0	33.0	33.0	33.0
Partially dextrinized and gelatinized corn meal with germ and bran‡	...	46.0	...	...	...	...	...	...
Partially dextrinized and gelatinized corn meal without germ and bran‡	...	...	46.0	...	...	...	...	...
Ground rolled oats	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Soybean oil meal	18.0	18.0	18.0	21.0	21.0	21.0	21.0	21.0
Stabilized beef tallow	...	...	...	10.0	10.0	...	...	...
Citrus molasses	...	...	...	...	...	10.0	...	...
Blackstrap molasses	...	...	...	...	...	...	10.0	...
Cane sugar	...	...	...	...	...	...	...	10.0
Dried skim milk	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Steamed bone meal	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Trace mineralized salt	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Per cent of total feed eaten	0.8	0.7	2.2	23.5	11.8	0.5	1.6	48.8

*All rations were fortified with vitamin A, riboflavin, pantothenic acid, niacin, choline, B_{12} and Aureomycin.
†Included 30 litters totaling 217 pigs. Average weaning weight (56 days)—39.1 lb. Average total feed consumed per pig—27.3 lb.
‡Supplied by Lauhoff Grain Co., Danville, Ill.
†All rations were pelleted except No. 5 which was fed in meal form.

Table 5. Experiment II*

Ration No.†	1	2	3	4	5	6
Ground yellow corn	23.5	23.5	23.5	23.5	23.5	23.5
Ground rolled oats	30.0	30.0	30.0	30.0	30.0	30.0
Soybean oil meal	25.0	25.0	25.0	25.0	25.0	25.0
Dried skim milk	10.0	10.0	10.0	10.0	10.0	10.0
Stabilized beef tallow	10.0	...	5.0	...	...	5.0
Stabilized lard	...	10.0	5.0	...	5.0	...
Cane sugar	...	...	...	10.0	5.0	5.0
Steamed bone meal	0.5	0.5	0.5	0.5	0.5	0.5
Ground limestone	0.5	0.5	0.5	0.5	0.5	0.5
Trace mineralized salt	0.5	0.5	0.5	0.5	0.5	0.5
Per cent of total feed eaten	6.3	24.8	11.5	14.7	30.3	12.5

*All rations were fortified with vitamin A, riboflavin, pantothenic acid, niacin, choline, B_{12} and Aureomycin. The experiment included nine litters and a total of 60 pigs. Average weaning weight (56) days—43.8 lb.; average total feed consumed per pig—36.9 lb.
†All rations were pelleted.

At the Florida Station we have been much interested in the palatability of creep starter rations. In the first experiment, summarized in Table 4, the objective was to study the palatability enhancing properties of several high energy feed materials. The feed materials tested included two specially processed corn meals, stabilized beef tallow, citrus molasses, blackstrap molasses and cane sugar.

Only three of the eight rations offered in this experiment were consumed in significant quantity. These were the rations containing 10% cane sugar and 10% stabilized beef tallow (pelleted) and 10% stabilized beef tallow (meal). Pigs preferred the pelleted beef tallow ration about 3 to 1 over the beef tallow ration in meal form. The rations containing specially processed corn meals, citrus molasses and blackstrap molasses were largely ignored by the pigs in this test.

In a second test, summarized in Table 5, it was demonstrated that a ration containing a combination of cane sugar and stabilized lard was more acceptable to pigs than a ration containing only cane sugar. When fed

(Continued on page 64)

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Land Values Indicate Farmers Feel Future Is Bright, Benson Points Out

MOORHEAD, MINN.—Despite politically inspired statements to the contrary, farm people as a whole believe that the future of American agriculture is bright.

This point was brought out by Ezra Taft Benson, secretary of agriculture, in a major farm policy address at a Farmers Day program in Moorhead.

Farm people's confidence in the present and future condition of agriculture is indicated by the fact that farm land values have continued to rise, Mr. Benson said. The average market value per acre of farm land in the U.S. is now 5% higher than a year ago.

Mr. Benson went on to note how burdensome surpluses, built up by high rigid price supports after demand slackened following the war, had depressed prices and kept farmers from sharing fully in expanding prosperity. "A storage program is not a market," he said, "nor is a government bin a customer. And it is markets we need, and customers we must have." Even the most storable commodities must eventually find a use.

Mr. Benson discussed various farm program proposals and pointed to the disadvantages of plans that bring tight controls, limits on production and limits on total income and "rationing of opportunity" in agriculture.

The Bright Side

Meanwhile, Mr. Benson said, per capita income in agriculture has been increasing in recent years and there are bright sides of the farm picture—such as a halting of surplus production. The surest and quickest way to work out of difficulties still facing agriculture is to strive to implement and improve the farm program of the present administration, Mr. Benson said.

Following is the essential text of Mr. Benson's address at Moorhead:

I am as aware as farmers are that net farm income, nationally, has declined 20% since 1951. Farmers are in a cost-price squeeze that has developed because gross farm income has declined three and a half billion dollars, while the cost of operating farms has changed but little. I can assure you your Secretary of Agriculture is aware of the harsh meaning of this squeeze. The fact that I am now working at the top level of the national government does not mean I am remote from the problems of men and women on the land.

Through the 1920's—another time of cost-price squeeze—I struggled with the problems of mortgage payments on my own farm. And in those years, as now, it was the young couple but recently started in farming, who had not had time to work down their debt load, who were in the most distressed circumstances. I repeat, I am not unmindful of the burdens, for I have lived through everything you are experiencing—and now am reliving these experiences with you.

A notable factor is in farmers' favor now—one we did not have in the 1920's. Farm land values are continuing to rise. The Department of Agriculture has just completed an analysis of the current farm real estate market. I think you will be interested as I was to learn that the average market value per acre of farm land in the U.S. is now 5% higher than a year ago.

North Dakota land prices were three percent higher in July this year than in July, 1954—Minnesota prices, 10% higher.

This fact indicates clearly that farm people as a whole think the future of American agriculture is bright.

Without in any way minimizing the squeeze on farmers that has developed since the peak of the Korean War inflation in 1951, the facts are that American agriculture is in sound financial condition.

Faith that this will continue to be true in the future is widespread, as evidenced by the continued rise in land prices—and this in spite of the fact that some howlers of doom and gloom have stayed up late at night figuring new ways to try to throw us into panic.

Two weeks ago I received a letter from a farm real estate broker in Iowa, stating that in 40 years in business he never before has experienced the difficulty he has now finding farms for prospective clients. I believe this confidence in the future is completely justified. We have made the transition from war-time inflation to a peace-time economy with truly remarkable economic stability. In the three years of the Eisenhower administration the general price level has moved in an exceedingly narrow range—we have experienced neither inflation nor deflation. Economic activity has rapidly expanded. The nation has been blessed with peace and

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Antibiotics With Raw Soybean Oil Meal Increase Growth Rate

Significant results have been achieved by adding antibiotics to rations containing high percentages of raw soybean oil meal, according to reports of experiments conducted at a mid-western university. Experimental animals fed these antibiotic-supplemented rations exhibited an increased growth rate.

The experimental rations contained raw soybean oil meal at a level of 25%, supplemented with methionine, minerals, and vitamins, including vitamin B_{12}.

Vitamin B_{12} Important For Normal Thyroid Activity

Recent research by a group of three scientists indicates that vitamin B_{12} may be tied in with proper thyroid function. This is of particular importance where high energy rations are fed.

Working on the theory that vitamin B_{12} may function in overactive thyroid conditions by restoring to normal, in part at least, the energy-requiring functions of impaired cells, the researchers have come to the conclusion that the primary manifestation of an overactive thyroid gland is a vitamin B_{12} deficiency.

Methionine May Play Role in Reproduction

English researchers recently conducted studies on boar semen using methionine and other compounds containing radioactive sulfur (S^{35}). Only the "tagged" sulfur from methionine and one other related compound appeared in the semen. This indicates that methionine may be useful in some cases of breeding difficulties caused by abnormal semen.

Protein-Energy Relationship Discussed in New Publication

A recently published work* by Dr. H. W. Titus sheds new light on the controversial subject of protein-energy relationships.

Dr. Titus points out that figures previously used for determining these relationships, as determined by Dr. Fraps of Texas, are not completely accurate under today's conditions. Therefore, the broad use of Fraps' values without a full understanding of their derivation can lead to improper conclusions. An example of changing values is the instance of corn. New hybrid varieties of corn have lowered the average values for protein, fat, and nitrogen-free extract (N.F.E.) from those occurring when Fraps began his basic work over twenty years ago. One of the most outstanding differences between Fraps' values and the values for "Productive Energy" determined by Dr. Titus are those for soybean meal. A difference of more than 40 percent in favor of Dr. Titus' figures is noted.

Metabolizable Energy

Dr. Titus' values for "*Metabolisable* Energy" are generally higher than Dr. Fraps' "*Productive* Energy" values because Dr. Fraps, in arriving at his figures, overestimated the amount of energy needed for maintenance. Also, Fraps ignored the energy available in the fiber of feedstuffs. According to Dr. Titus, in a mixed feed, up to 40 percent of the energy of the crude fiber of a feed is used by chickens.

These variations in energy values are comparable to some of the tremendous variations in the figure obtained for the content of vitamins and amino acids, in various feedstuffs. With this thought in mind, U.S.I. must advise the use of discretion when using its formula for determining methionine-energy relationships. (See U.S.I. Feed News July 1955.) New energy concepts must be considered, and it must be remembered that methionine values given in any chart represent average values and should not be used indiscriminately. Also, the "Net Energy" value determined under one set of conditions is not fully valid under a different set of conditions.

Several factors can influence the actual methionine content of a specific feed ingredient. Such things as the climate where vegetable crops were grown, soil types for growth, and processing conditions all have an effect on the amount of natural methionine found. When antienzymes, such as antitrypsin from soybean meal, are not completely inactivated by processing, the antienzyme can interfere with the methionine available to the animal although chemical assays can indicate high values. Other ingredients used in modern poultry rations have been shown to interfere with the interpretation of the biological effects expected from methionine.

Effect of Antibiotics

The use of antibiotics in poultry rations undoubtedly has an effect on methionine requirements. It is known that antibiotics increase protein availability. Antibiotics also help overcome the deleterious effects of raw soybean meal (see article this page), a property also shown by methionine. Thus the whole concept of methionine-energy relationships, while valid, should be used with full knowledge of the variations of the underlying principles.

Dr. Titus' work clarifying energy values points the way to similar research needed to improve the presently controversial methionine values.

Future issues of *U.S.I. Feed News* will carry articles on this subject as soon as newer and better figures are available.

*Titus, H. W., 1955. *The Scientific Feeding of Chickens*, revised 2nd edition with addendum. The Interstate Printers and Publishers, Inc., Danville, Illinois.

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prosperity. Production, employment and payrolls have climbed to successively higher record levels.

Farm families, we all know, have not fully participated in these gains. The prime reason they have not has been the accumulation of surplus stocks of major farm commodities—in such burdensome quantities as to depress prices received by farmers for current production.

These surpluses have accumulated out of the mistakes of the previous administration. But even with the depressing influence these mistakes have exerted on the current market for farm products, the income of farm families has held at levels far higher than we ever before have experienced in a transition from war to peace. Cash receipts from farm marketings in 1954 were 98% of the 1953 receipts in Minnesota, and 99% in North Dakota. And in Minnesota in the first six months of 1955, the cash receipts from farm marketings were one percent higher than in the corresponding month of 1954—in North Dakota, 8% higher.

It is of course these facts, together with confidence in the future, that account for the still-rising price of farm land.

Critics of the Eisenhower administration have been working overtime devising cute phrases to indicate that this administration is pushing farm families off the land. The phrases may roll well on the tongues of political hopefuls—but they show a surprising lack of familiarity with fundamental trends in American agriculture and with the history of the country.

For more than a century, farm population has declined as a percentage of our total population. And we are fortunate it has. As agriculture grows more efficient, it requires fewer people. As industry expands, it creates more jobs in the cities. Those who now bemoan the net movement of people from farm to non-farm jobs are peddling a cheap brand of demagoguery.

The simple facts are that as farmers use more modern equipment—the machines and tools that enable each worker to care for more acres and more animals—fewer farm workers will be needed. With today's farm implements, the farmer is better able to produce enough in an hour, a day, or a year to earn an income that will let his family match the living of other American families. If the tools are to be increased, the work force on farms cannot be as large as formerly. Every farmer knows this to be true, and knows that it isn't good business to maintain unnecessary help on the farm.

Per Capita Income Up

Per capita income in agriculture last year was 11% higher than it was either in 1950 or for the average of 1947 through 1950.

The increase would be less—and the per capita income of farm people would not be as favorable as it is—if some workers no longer needed in modernized agriculture had not obtained non-farm work elsewhere.

I repeat that such movement out of agriculture is an essential adjustment that has been going on for decades. I am not amused when it is distorted and misinterpreted for purely political reasons. We must have in agriculture both a bigger income pie and bigger pieces of that pie—not merely the same pie with more and smaller pieces.

Only in comparison with 1951, the peak year of the Korean War inflation, was last year's per capita farm income down—down 6%. I am no more happy than you are with this adverse trend. Nor am I happy with the cause. Farm prices and income are down, because of the burdensome price-depressing influence of our accumulated surpluses.

I have pointed out repeatedly, and do so again, that all the price decline in agriculture from the peak in 1951 through mid-1955 occurred under high rigid price supports at 90% of parity, and two-thirds of that decline took place before this administration came to office.

It was not high price supports that resulted in high farm prices and incomes during the war and post-war years. It was war that produced them—the destruction of war and the inflation that goes with war. No political party can or should take credit for war-time prices unless they want also to take credit for the war and its blood-shed.

As the world began to recover from the devastation of war and we experienced a decline in overseas outlets for our farm products, price-supported commodities began to accumulate in government storage. The 90% of parity supports were not effective in holding up farm prices and income when stocks began to accumulate

Not a Market

A storage program is not a market—nor is a government bin a customer. And it is markets that we need, and customers that we must have. A storage program is only a storage program. Supplies of staples accumulated in the hands of government can neither be increased indefinitely nor held indefinitely. Even the most storable commodities must eventually find a use. When stock-piles must be liquidated there are three alternatives—and no more:

1. The commodities can be moved domestically — but if they are, they go to market in direct competition with current production.

2. They can be sold or given away overseas—but if so, it is at the risk of upsetting world markets and depressing world prices, which again adversely affect you. Or,

3. To do the unthinkable—to deliberately destroy food.

What I am saying is that there is no easy way to unload the storage stocks. And the very existence of large stock piles, whether in private or government hands, rests as a burden upon the market as long as the supplies exist. The stocks depress prices because there is always the expectation, the threat and the risk that, in one form or another, for one purpose or another, the supplies will somehow move on the market.

If we would but heed the history of past experience, this lesson has been taught over and over again. Anyone—regardless of party or posi-

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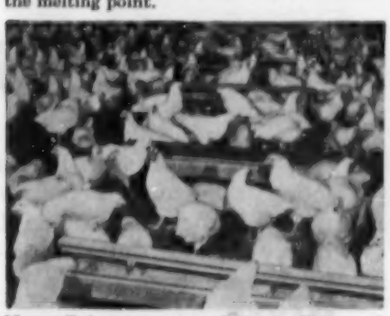

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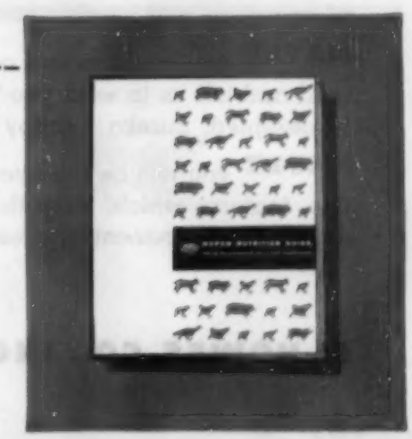

tion — who advocates unending accumulation in government storage, is nothing short of irresponsible—and is blindly callous of the welfare of farm families and their future.

A storage program, I say again, is not a market. It is merely borrowing from the future. Putting commodities into a stockpile in one year has the effect of reducing the market supply at that time—resulting in a temporarily higher price. The consequences of the action are delayed. The supplies exist and depress markets in subsequent years. Continued high price supports that cause government to add progressively to its accumulation can lead only to depressed prices and to the complete breakdown of the price support program.

This is why the Eisenhower administration has taken its firm stand against unrealistic levels of price support. It is our view that agriculture is not a one-year affair. Farming is a life-time business. When, either from ignorance or for political expediency, something is promised that, at best, can hold only for a year or two, and future years are forgotten, no service is done for farmers —only disservice can result.

The American people developed farm programs first to help pull farmers out of depression—then changes were made specifically to stimulate all-out production for fighting the war. Policies that fitted the demands of war—especially the high price supports designed to encourage maximum production—cannot be carried into the years of peace without being destructive of farmers' welfare.

Enormous government accumulations, and their disastrous effects, were apparent long before the Eisenhower administration took office. Yet the previous administration continued to call for all-out production even after the emergency that justified it had passed. In 1952 they failed to invoke production controls on wheat and cotton—and even urged farmers to increase their acreage of corn.

The farmer and this administration inherited the consequences. We had to invoke the production control features of the agricultural legislation. But even so, government stocks built up to more than $7 billion— on which storage costs alone mounted to a million dollars a day.

Again I emphasize, it is these accumulations that have depressed the prices farmers are now receiving. More seriously, these stocks have made necessary the restrictions on production that are now limiting farmers' income.

Quantity Counts, Too

With government-owned wheat amounting to a full year's crop, it has been necessary to cut back wheat acreage from 78 million to 55 million acres. Far more serious for most wheat farmers than the price of wheat, is the restriction of their acreage.

I say again, as I have many times, that it is not price alone that determines the welfare of farm people. Income is what farmers need. And income is determined by quantity as well as price.

And again I say that those who would now turn farmers back from the progress that has been made to reinstatement of rigid 90% supports, are only making a political bid—with tongue in cheek—for in truth they know the arithmetic of unmanageable surpluses.

If such a change in our legislation were to take place, farmers would be faced with still more serious production restrictions—and our export markets would be still further handicapped. We would be destroying markets for farm products instead of building them—and only through building markets can we have a fully healthy, prosperous agriculture.

Direct Payments

Some persons, bereft of faith, panicked by fear—who belatedly recognize, as we have for some time, that 90% of parity is a bankrupt program —would turn us down still another blind road. Some have called for a program variously called compensatory payments or direct payments to farmers. Such a program would allow the prices of farm products to seek their own level in the market with the taxpayer then making up the difference to farmers between the market price and some predetermined guaranteed price.

Some well-meaning persons have supported this idea in the mistaken belief that it would return free markets for farm products and greater freedom to farmers to produce. Unfortunately, it would have no such results.

Compensatory payments, broadly applied, would result in a frankly socialized agriculture. The added income poured into agriculture would in a short time stimulate production far beyond any responsible estimate of need. Payments above the market level obviously could be paid only upon limited quantities rather than upon all that farmers receiving such payments would like to produce. This would mean a necessity for annual quotas for each commodity covered (probably on a quantity rather than an acreage basis). National quotas would have to be divided by states, and counties and down to individual farms. Freedom would be gone—farmers would be reduced to a government dole. I do not know how

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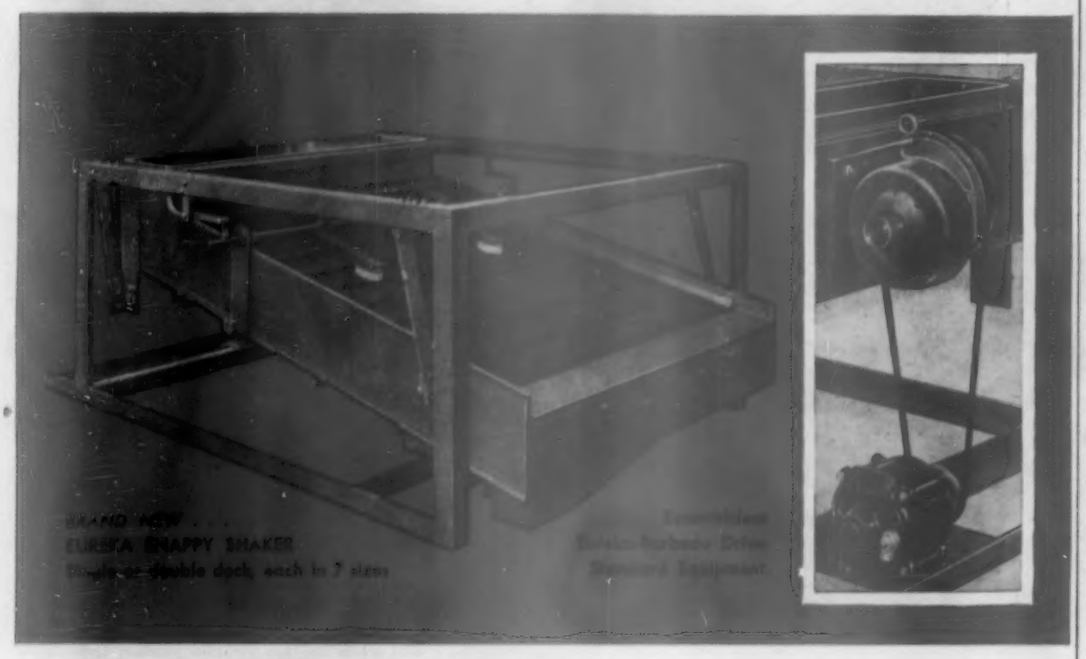
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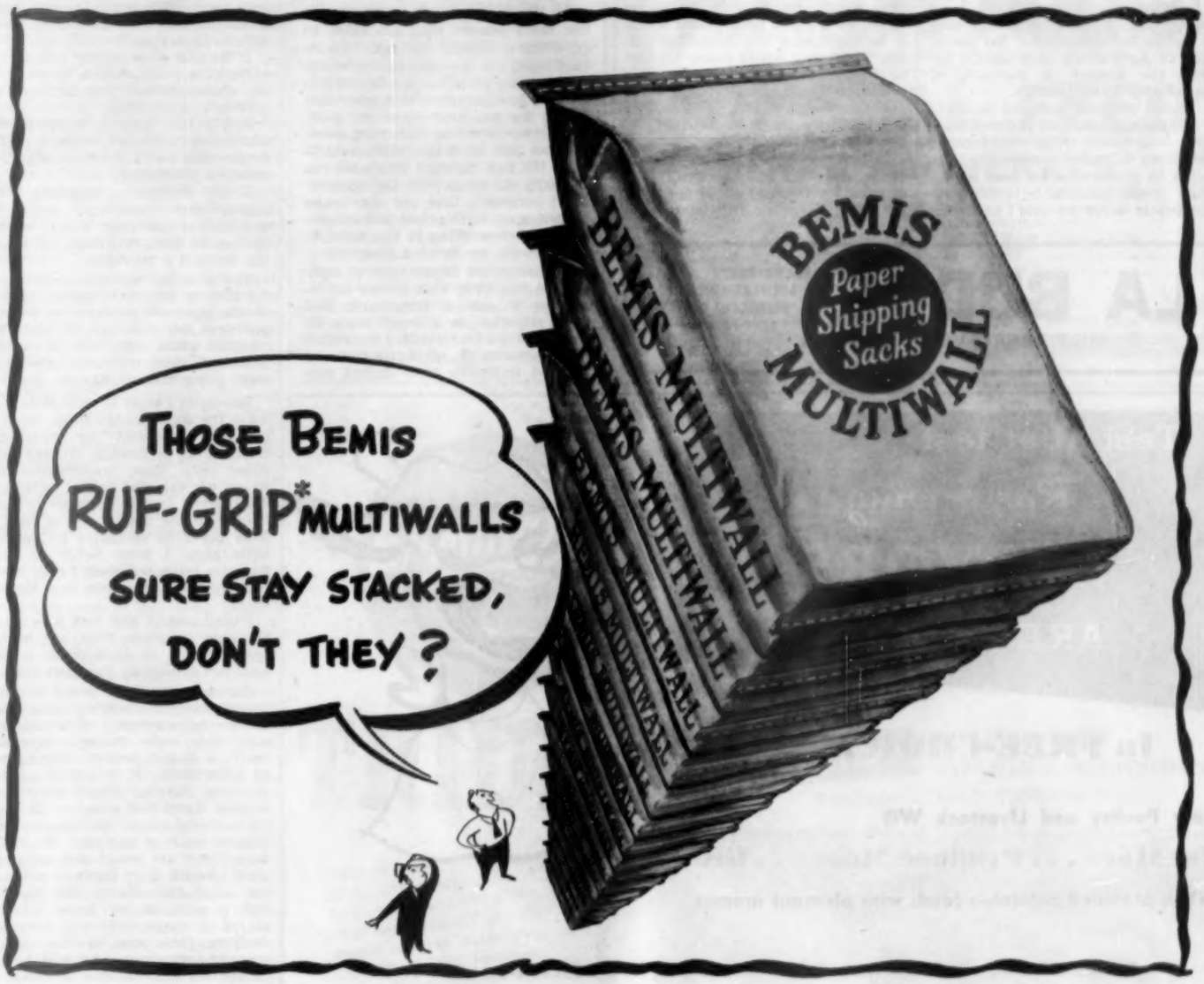

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farm families could more easily, nor quickly, become wards of the government. Nor do I know how the direct payments could be put into effect without provisions that would have these results.

I certainly would not want to be responsible for establishing this kind of future for agriculture. No Secretary of Agriculture ever should become the director of rationing of opportunity in agriculture.

Second, a direct payment program would make agriculture a closed business—into which entry would range only from difficult to impossible. The rights to produce under such a program would have to be closely restricted in order to avoid upsetting the annual quota that could be marketed. Thus, new producers would find quotas hard to obtain. This would be a serious matter when extended to all major farm products.

And third, the windfall earnings that would result from payments above the market price, would shortly be capitalized into farm-land values. Then they would become a cost to the young farmer who thereafter would be buying a farm. Again, I would not want to be a party to thus burdening the young people who will be our future generations of farmers.

Direct payments could be put into effect, and their more serious consequences for farmers would not show up until a year or two later. This, of course, makes such a program politically appealing. But neither this administration — nor anyone of integrity—could approve for immediate political gain what so surely would be disastrous in the end.

All thoughtful people—farmers and the many others who are close to agriculture—should be fully aware that there are no panaceas by which the complex problems we face are to be quickly eliminated. If it were that simple the problems would not exist, and we would not be discussing them. We can pull no magic white rabbits from the hat, through which we can suddenly do away with the accumulated surpluses that are the major burden upon farm prices and income. But we are working in the right direction—we are making progress.

Whenever the Department of Agriculture has been able to use its resources to ease a temporarily bad price situation on a sound basis, we have done so. On Oct. 24, I instructed the Department of Agriculture to proceed forthwith in a limited purchase program for pork. The pork products to be acquired under this program are to be distributed through school luncheons, institutional feeding and for needy persons. The department will purchase only high-quality pork products from light weight hogs. In this manner we hope to meet three definite objectives:

1. We will permanently expand the market for pork products by teaching our school children that high-quality pork is a choice food.

2. We will help to alleviate the current price distress facing hog producers and assist them in adjusting numbers to effective demand.

3. By purchasing products from high-quality light weight hogs, we will further encourage a shift in production to meat-type hogs for which the demand is stronger.

The program we are undertaking for hogs is similar in many respects to the purchase program of the department two years ago for beef. This program aided materially in the adjustment that the beef producers were going through at that time.

But again I want to emphasize that what the department can do through purchase programs for perishable commodities is limited. We can purchase only those commodities for which we can find useful outlets. I shall never knowingly cause or contribute to the destruction of food. I hope never to slaughter six million little pigs; I hope never to pour kerosene oil on potatoes; I hope never to have dried eggs spoil in a Kansas cave.

I shall always join with farmers in pursuing programs that are in the best interest of Agriculture in the long run as well as the short run.

Farmers should be proud of their contributions in changing the outlook for the dairy industry. This improvement has come through expanded markets and increased consumption of dairy foods. It is indeed notable progress. Surplus stocks have been worked down and prices to farmers have risen above the surplus depressed levels of last year. We in the department are proud that we could team up with dairy farmers in bringing about this change. We feel we had a part—as we know farmers played a major role — in changing dairying from one of the darker spots in agriculture, as it was, to one of the bright spots, as it is today.

Wheat Problem

Another of the major commodities is wheat—and I wish this picture were as bright as dairying. As you know, virtually all of the 1 billion bushels of wheat carried over into this year's harvest was owned by the government. Commodity Credit Corp. has approximately $2.5 billion invested in wheat price supports — more than one-third of its current inventories and outstanding loans. A decade of 90% supports has complicated the wheat problem by encouraging an expansion of wheat in areas not previ-

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ously important wheat producers—thus penalizing the areas (such as the Northern Plains) where wheat is a traditional crop.

But the department has been far from idle in dealing with the wheat problem. We have doubled the grain storage facilities owned or sponsored by the Commodity Credit Corp.—from the 750 million bushels of capacity available in 1952 to 1.5 billion bushels of capacity this year. We have liberalized the grade specifications for supporting wheat, making possible loans on wheat that did not previously qualify. We have in operation a subsidy program for wheat exports which, for liberality, is not approached for any other commodity. We obtained cooperation from the Congress in liberalizing acreage restrictions on durum.

We advocated a set-aside for wheat which permits the support price to be set above the minimum level sooner than would otherwise have been the case. Under Public Law 480, sales for foreign currencies have been developed for surplus commodities costing $527 million—of which 42% was wheat. For 1956 we have announced price-support discounts on a list of low-quality wheat varieties. This step was necessary in order to turn back a flood-tide of undesirable grain that invariably ends up in government storage, and to encourage instead the varieties for which there is a larger market as food.

Near Balance

The wheat problem is far from solved, because of the billion bushels that still clog the government bins and depress the price. But I am happy indeed to report that we have a near balance between production and consumption this year. Present indications are that the total carryover of wheat will be only slightly increased over last July as the result of a smaller 1955 wheat crop.

Of course, this result will be obtained only through the most aggressive efforts to export wheat—and at a highly subsidized price. But this year the flood of accumulations is checked.

With the help of a huge surplus-disposal program, it now appears that we will have close balance between production and consumption of our total farm production this year. There may still be changes in the estimates of the total harvest—but the present indication is that consumption and exports will absorb 99% of all we will produce, and only about 1% will be added to carryover.

This is the bright side of the farm picture. When surplus accumulation can be halted, the outlook for all of agriculture can be improved—as already has happened in dairying.

We are headed in the right direction. The surest way, the quickest way, to work out the difficulties still facing us is to strive aggressively to implement, and to improve, the farm program of this administration. I pledge that every facility and resource of the department will be focused on farmers' problems at all times.

I am striving earnestly and conscientiously to serve my country as Secretary of Agriculture. It is not a job that any man would want at this time if he were interested only in advancing his personal comfort or popularity. But it is also a stern challenge. I am going to see it through just as long as the President wants me to remain in his cabinet. I pledge that I will never knowingly advocate or support any program or policy which I believe is not in the best interest of our farmers—regardless of political pressure.

I am going to continue to fight for American agriculture and for what I believe is right, as God gives me the wisdom and strength to do so.

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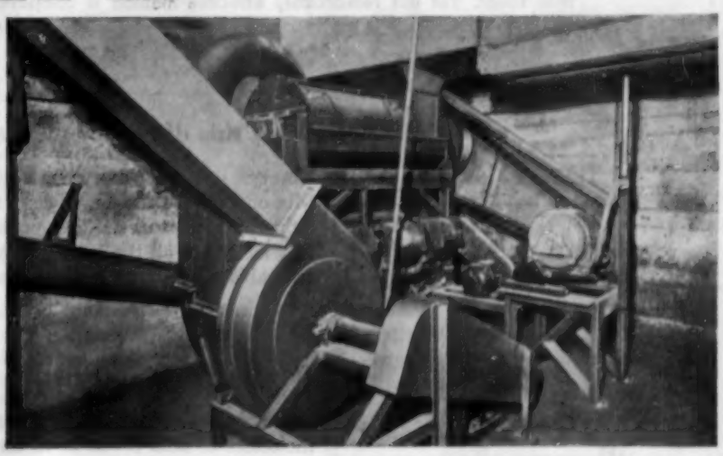
*Patent Applied For

View at right shows one of the two simple, proven Triumph No. 1200 Corn Shelling systems at the world famous Anderson Truck Terminal, Maumee, Ohio. These compact systems shell the corn; remove and blow away husks, silk and small trash particles with the cobs; discharge up to 1200 bushels of air cleaned shelled corn per hour. Six more Triumph No. 1200 Corn Shellers are being installed by Anderson during 1955.



Semi-trailer Loaded with 22 Tons of Ear Corn is Dumped and the Corn Shelled and Air Cleaned in 30 Minutes with a

TRIUMPH No. 1200 CORN SHELLING SYSTEM

Listed below are just a few of the plants that already have installed two or more

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Anderson Truck Terminal ..... Maumee, Ohio
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Farmers Grain & Coal Co. ..... Mason City, Ill.
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Mary Does Some Thinking

Mary Brooks, Joe's vivacious, blue-eyed wife, who seemed to dress better every year, and who always kept her eyes wide open for adaptable business ideas, seemed quite animated when Joe came home for dinner that evening. All through the meal she kept asking him if he wanted another piece of roast chicken, or bread with apple butter, and she even offered him another piece of pumpkin pie.

"How come you are so extra nice to me?" Joe asked quizzically, but glad to get the extra piece of pie. "Is there some new dress or hat you've set your eye on?"

Mary looked offended. "Now, Joe, don't infer that I'm only nice to you when I want some new clothes."

"No, I didn't say that," Joe said, "but I can say that you are never cross and crabby when you want some new clothes."

Mary laughed. "Well, for once I'm going to fool you. I have a business idea for you, and there's only one condition."

"What?" asked Joe suspiciously.

"That you help me wipe the dishes, and then take me for a walk downtown."

"A walk downtown?" echoed Joe, running his hand through his brown hair. "Why that's all of three blocks. We can drive down there if you have something to buy at the drug store."

"Drive?" said Mary contemptuously. "And I don't want to buy anything at the store. I just feel like—well, like walking. There's a beautiful moon out."

"Oh," said Joe not too enthusiastically.

Mary looked a little severe. "Before we were married it was YOU who asked me to go walking EVERY night," she pointed out. "Now I have to ask YOU."

"Oh, well," said Joe, "that was 20 years ago. Now I work harder, and I get tired faster. "Then, seeing the look in Mary's eyes, "but if that's the condition for getting the business idea, I'll go walking with you in the moonlight. I'll even buy you a sundae."

"That'll be nice," Mary was all sunshine. "Now, let's get at the dishes, which our darling twins have stacked, because I said, 'or else—'."

"You ought to say it more often," Joe commented. "They need that type of exercise."

What's the Idea?

Later, the feed dealer dried a dish. "Well," he said, "what's the—ahem—idea?"

Mary washed the gravy bowl. "Joe, she said, "when a person gets older, what is it he must look out for?"

"That's easy," declared Joe genially. "Expenses?"

"No, I mean in the way one thinks?"

Joe frowned. "Well, I suppose, one gets so he doesn't like to change. He likes to stick to the status quo."

"Exactly," Mary said delightedly. "You got it right the first time. And in feed and egg merchandising the status quo can be dangerous from a profit standpoint."

Joe wiped another dish. "You mean

Science develops method of feeding for

MILK FEVER PREVENTION

HEAVY VITAMIN D FEEDING

5 to 7 days before freshening

FOUND HIGHLY SUCCESSFUL

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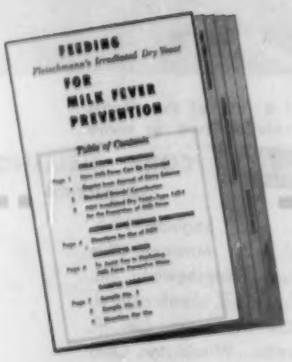
What this discovery means to feed manufacturers...

You can now offer dairymen a Milk Fever Preventive Mix or FIDY Type 142-F as part of your complete dairy feeding program. The portfolio below places in your hands all the facts you need to know. Read the table of contents and send for free portfolio.



How big is the market...

We wish we could give you a definite figure on the incidence of milk fever. It varies from breed to breed and with the milk fever history of families within the breed. But milk fever is well known to dairymen as a disease that destroys dairy profits.

How FIDY will announce this important discovery...

When new advances are made in vitamin D nutrition, we owe it to keep you and your customers advised. How to feed for milk fever prevention will be told dairymen nationally. We will also tell dairymen that feed manufacturers will be able to supply them with preventive Vitamin D fortification. So be ready before this advertising campaign breaks.

Write for your free Milk Fever Portfolio today! Address Desk FS-115, STANDARD BRANDS INCORPORATED, *Agricultural Department*, 595 Madison Avenue, New York 22, N. Y.

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to infer that we feed dealers and egg merchandiser are behind times?"

Mary nodded brightly. "Uh huh! Aren't you?"

"I don't think so. You tell me different."

Mary scraped hard on a pan. "Well, every Saturday and sometimes during the week millions of American women buy eggs at their grocery store. And what do they get?"

"A dozen eggs in a carton," Joe said.

Mary nodded. "That's just it. A dozen eggs. And a lot of women don't realize what's in those eggs. That's where we've failed."

"How?"

"Well, an egg is an almost perfect food, as food experts know. It contains practically all nutrients except Vitamin C. It's a terrific buy for the money, isn't it?"

"Sure."

Mary smiled again. "But those people who put the eggs into cartons are lame merchandisers. All they say is 'Quality Eggs' or 'Premium Eggs' or 'Fresh Eggs'."

"What's wrong with that?"

"Nothing, only we could do better," Mary explained. "We've been marketing eggs like that for years, while most other food producers have been decorating their sales packages to give them extra sales punch."

"How could we sell more eggs using improved methods?" asked Joe. "Tell me that, if you know so much."

Mary Suggests Bright Stickers

Mary put the last pan in the tray to drain and anchored her hands on her aproned hips. "Well, some enterprising feed dealer could have a lot of brightly colored, gummed stickers printed and distributed to every customer who sells eggs in cartons," she said. "And he could also get many egg companies to use these stickers or some just like it."

"For what reason? Why would these stickers be so special?"

Mary sighed. "It takes you a long time to catch on," she said, "but if eggs are such a perfect food, that sticker should say that eggs are the perfect food and contain the following vitamins beneficial to health. List those vitamins. Other food producers do, and they have fewer vitamins to sell than the egg producer."

"Yes?" said Joe interestedly.

"Besides listing those vitamins," Mary said, "the sticker copy should also urge people to eat one egg per day per person for good health. And the sticker should also say that these stickers are furnished through the courtesy of the Brooks Feed Co."

Joe's eyes widened. "Not a bad idea at all, Mary."

"Farmers could paste such a sticker on each carton of eggs sold," Mary said, "and they would help create a greater appreciation for the sterling good values in eggs, and also create a bigger market for them. Grocers might be willing to so stickerize their eggs in cartons. How can you sell more eggs if you don't everlastingly keep telling people how good they are? Think of all that valuable advertising space on present egg cartons that is going to waste!"

"Gosh," said Joe enthusiastically. "Let's go for that walk now and talk some more about this idea. I'll even buy you two sundaes if you want them. Maybe this will be a darn good deal for me after all."

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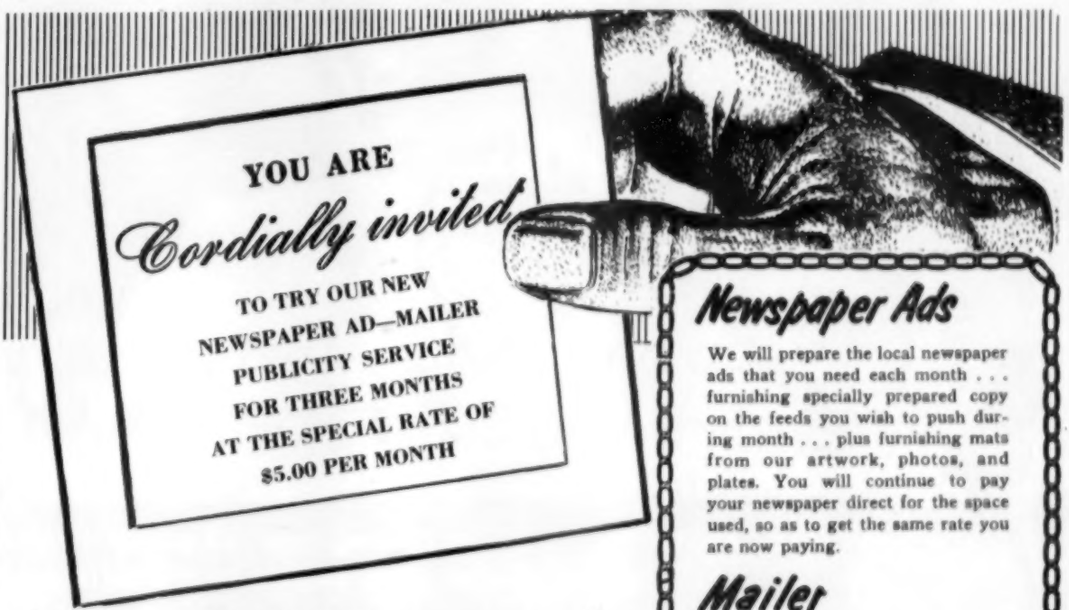

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We will prepare a publicity article each month which your local newspaper will print about your mill and your feeds. We have the "know how" to prepare the kind of articles and photos that the newspaper will run. This publicity alone is worth more to you than our fee charged each month.

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Terramycin will put more meat on their ribs, a curl in their tails.

Terramycin protects the performance of your feeds under a wider range of farm and disease conditions

IN SWINE FEEDS. Evaluation of nearly 100 feeding trials shows Terramycin to be best of all antibiotics in promoting growth of pigs. Terramycin also gives consistently better results in reducing and preventing scours. (Most of the common scours-causing organisms are not sensitive to penicillin.)

IN EGG FEEDS. A drop-off in egg production may be evidence of a low grade, non-specific infection in the flock. Poultrymen have found that changing to a feed containing high levels of Terramycin often gets the flock back on full feed, quickly snaps hens out of a laying slump.

IN TURKEY FEEDS. Terramycin is highly effective in preventing and controlling mud fever (blue comb, non-specific enteritis). Use it in feeds to help maintain appetite and promote gains during treatment for infectious sinusitis. Keeps even infected flocks eating and growing.

IN BROILER FEEDS. Terramycin at high levels gives the grower more positive protection against losses to CRD, and other respiratory disease-causing organisms. Many of these organisms are classed as "gram-negative bacteria" which are not sensitive to penicillin but are highly sensitive to Terramycin. No other antibiotic is effective against more disease-causing organisms.

IN CALF FEEDS. Terramycin in calf starters reduces losses from scours, promotes up to 25% faster gains, saves milk that's worth far more than the cost of the feed.

IN CATTLE FEEDS. It has been demonstrated that Terramycin in beef cattle supplements increases gains and feed efficiency. When used in combination with Diethylstilbestrol, Terramycin increased beef gains another 13%, improved feed efficiency 6%, improved carcass quality and grade and increased net return several dollars per head.

Performance Rating

Terramycin gives greater protection against scours, respiratory diseases and mixed infections

How well a balanced feed performs depends on the germ population on the farm where it is used—and the performance rating of the antibiotic in keeping the disease-causing organisms from getting the upper hand.

But the farmer, when he buys his pig starter, for example, wouldn't know an "Aerobacter aerogenes" from an "Escherichia coli" even if he could see them. But he does know the trouble they can cause— scouring, setbacks, poor feed performance.

That's why he buys a feed with adequate germ-fighting levels of antibiotics. But many antibiotics, such as penicillin for example, are not effective against these common scours-causing bacteria. Terramycin on the other hand is highly effective.

When neither the feeder nor the feed manufacturer knows for sure what kinds of bacteria the feed will be called on to fight, *the wider the spectrum of the antibiotic, the more dependable the results . . . the better the performance rating of your feed.*

In field control of pig scours, and in reducing poultry losses from CRD, High Level feeds containing Terramycin have repeatedly given growers the best results—in the shortest time.

For prevention of disease, it is impossible to put an exact dollar value on the extra protection that Terramycin gives the grower. But in terms of results it's the one that costs the least.

"BOX SCORE" AGAINST SCOURS

ORGANISMS causing or associated with scours or enteritic conditions of pigs and calves.	ANTIBIOTIC EFFECTIVENESS*1	
	Terramycin*2	Penicillin
Aerobacter aerogenes	Yes	No
Escherichia coli	Yes	No
Pseudomonas Aeruginosa	Yes	No
Pasteurella sp.	Yes	Yes
Proteus vulgaris	Yes	No
Salmonella sp.	Yes	No

*3

*1 Sensitive to at least 15 mcg. per ml.
*2 Brand of oxytetracycline
*3 In vitro studies, Welch, H., "Principles & Practice of Antibiotic Therapy", Medical Encyclopedia, Inc., N. Y., 1954

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Central Soya Co. Net Earnings Down

FORT WAYNE, IND.—Net earnings of Central Soya Company, Inc., were $2,606,910 after taxes in the year ended Aug. 31, as against $3,873,735 in the preceding fiscal year. The earnings were equal to $2.39 a share on the 1,089,000 shares of capital stock outstanding, compared with $3.56 a share on the same number of shares last year.

Net sales were $144,828,662 as compared with the preceding year's record $153,055,800. Before-tax earnings were $5,113,990 and tax provisions were $2,507,080, as against $7,932,114 and $4,058,379 a year ago.

"The decline in net sales was due to the lower price level of agricultural commodities," said Harold W. McMillen, board chairman, and Dale W. McMillen, Jr., president, in their joint report to shareholders. "Soybean oil meal prices throughout the current crop year ranged from 25 to 40% less, and mixed feed sales prices averaged approximately 20 to 25% a ton below prior year prices.

"In terms of tonnage processed and shipped the year was very satisfactory. Gross tonnage of soybeans processed was down fractionally over 1%, and gross tonnage of livestock and poultry feeds shipped was up substantially."

The decline in net earnings was almost all due to the soya operations, the report pointed out. "At no time during the year was there a respectable margin between the cost of beans and the price of the products derived therefrom," it said.

Investment in plant expansion resulted in a reduction of working capital from $29,763,511 a year ago to $27,273,294 at Aug. 31 this year. Sizable nonrecurring expense was incurred in the construction and opening of the company's new soybean processing plant, feed mixing plant and 3 million bu. grain storage bins at Chattanooga, Tenn. However, the company said, "Our operations at Chattanooga are profitably exceeding our budgeted expectations. We have been processing beans in this plant since April and will have the feed mill in full operation Nov. 1."

With completion of the new Chattanooga plant the company's combined soybean processing capacity is more than 40 million bu. a year and feed manufacturing capacity more than 1 million tons annually. Other plants and mills are operated at Decatur, Ind.; Gibson City, Ill.; Marion, Ohio; Harrisburg, Pa., and Memphis, Tenn.

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Oats Disappearance In First Quarter Near Record Level

WASHINGTON — The second largest domestic disappearance of record for the first quarter of the year and a decrease in the imports of oats are reported in the quarterly oats market summary issued recently by the U.S. Department of Agriculture. The summary also notes that oats prices on the farm during the July-September quarter were sharply below a year ago and that the oats crop this season was the largest of record.

Domestic disappearance of oats July-September totaled 521 million bushels, the second largest of record for the first quarter. This compares with 440 million bushels the first quarter last year and 441 million the five-year (1949-53) average.

Exports of oats the first quarter were the largest since 1949 and totaled 4.9 million bushels. This compares with only 52,000 bu. for the comparable period last year and 106,000 bu. two years ago.

Oats used for feed July-September amounted to 510.5 million bushels compared with 434.1 million the same period in 1954. Disappearance of oats per grain-consuming animal unit the first three months this season was 2.8 bu. or slightly more than a year ago.

Oats prices on the farm the first three months this season averaged only 57¢ bu., the lowest for the period since 1942. Oats prices at Minneapolis averaged 58¢ bu. during October compared with 56¢ in September and 74¢ in October, 1954.

Although farm prices were below the national average support, only 24,558,810 bushels of oats were placed under price support through Sept. 15 as compared with 33,716,971 bu. on Sept. 15, 1954.

Sales of oats by the Commodity Credit Corp. July 1 through Oct. 12 this season amounted to nearly 14 million bushels. This compares with 5.7 million bushels sold the comparable period last season. Of the sales this season nearly three fourths have been for export, according to the USDA report.

Stocks of oats Oct. 1 amounted to 1,431 million bushels, the largest of record. This compares with 1,297 million bushels on Oct. 1, 1954.

Imports Down

Imports of oats the first three months of the season amounted to only around 800,000 bu., the smallest for the period since 1947, and compares with 3.9 million the first quarter last year and 21.3 million for the comparable period in 1953. At the recommendation of USDA, the President announced on Sept. 9 that import quotas on oats would not be continued beyond Sept. 30, 1955.

Oats production in 1955, estimated at 1,636 million bushels, is the largest of record, 9% more than the 1954 crop of 1,500 million and 313 million above the 10-year average. With a July 1 carryover of 315 million bushels, domestic supplies for the 1955-56 season totaled 1,951 million bushels, the largest of record, and 218 million more than the domestic supplies for 1954-55.

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Contains vitamins, proteins, minerals!

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G-AN-EN offers stability improved vitamins A and D_2 feeding oil, B_1, riboflavin, niacin (the anti-black-tongue factor), and pantothenic acid.

6 minerals
G-AN-EN offers the valuable milk minerals, calcium and phosphorus, plus the mineral salts, copper, iron, manganese and zinc.

Milk protein
G-AN-EN offers milk protein which contains all the essential amino acids.

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CONVENTION CALENDAR

Nov. 13-15—Tennessee Feed Manufacturers Assn.; Peabody Hotel, Memphis; sec., W. H. Levine, 613 First American National Bank Bldg., Nashville 3, Tenn.

Nov. 15-17 — Minnesota Poultry Hatchery Assn.; Hotel Radisson, Minneapolis; sec., L. M. Baumgartner, Litchfield, Minn.

Nov. 17-18—Florida Feed Dealers meeting and nutrition conference; University of Florida, Gainesville; sec., Julian C. Smith, c/o Flint River Mills, Tallahassee, Fla.

Nov. 17-18—Florida Nutrition Conference; University of Florida, Gainesville; chmn., Dr. John P. Feaster, Univ. of Fla., Gainesville, Fla.

Nov. 21-22—Western Grain & Feed Assn.; Fort Des Moines Hotel, Des Moines, Iowa; sec., Mark G. Thornburg, 928 Des Moines Bldg., Des Moines 9, Iowa.

Nov. 25-26 — American Society of Animal Production; Hotel Sherman, Chicago; sec., W. M. Beeson, Purdue University, Lafayette, Ind.

Dec. 2-3—Arkansas Feed Manufacturers Assn.; Arlington Hotel, Hot Springs; sec., James Dunaway, P.O. Box 549, Little Rock, Ark.

Dec. 5-6—Farmers Elevator Assn. of South Dakota, Huron, S.D.; sec., Clif C. Anderson, 327 Citizens Bldg., Aberdeen, S.D.

Dec. 8-9 — North Carolina Feed Manufacturers Assn. Nutrition Conference; College Union Bldg., N.C. State College, Raleigh; sec., William Hoyle, Laurinburg Milling Co., Laurinburg, N.C.

1956

Jan. 6-7—Kansas Seed Dealers Assn.; Hotel Broadview, Wichita, Kansas; sec., O. E. Case, 901 Wiley Bldg., Hutchinson, Kansas.

Jan. 9-10—Kansas State Formula Feed Conference; Kansas State College, Manhattan; chmn., Dr. F. W. Atkeson, Kansas State College, Manhattan, Kansas.

Jan. 15-17—New Mexico Grain & Feed Dealers Assn.; Hilton Hotel, Albuquerque; sec., H. B. Hening, P.O. Box 616, Albuquerque, N.M.

Jan. 16-17—Northwest Retail Feed Assn.; Hotel Nicollet, Minneapolis, Minn.; sec., W. D. Flemming, 112 Grain Exchange Bldg., Minneapolis, Minn.

Jan. 23—Nevada Feed Conference; Univ. of Nev., Reno; chmn., Dr. J. F. Kidwell, U. of Nev., Reno, Nev.

Jan. 22-24—Indiana Grain & Feed Dealers Assn.; Claypool Hotel, Indianapolis; sec., Fred K. Sale, 600 Board of Trade, Indianapolis, Ind.

Jan. 23-25—North Dakota Poultry Industries Convention; Elks Club, Fargo; chmn., Irving J. Mork, North Dakota Agricultural College, Fargo, N.D.

Jan. 23-25 — Southeastern Poultry and Egg Assn.; Municipal Auditorium, Atlanta, Ga.; sec., J. Paul Williams, 615 E. Franklin St., Richmond, Va.

Jan. 26-28—American Dehydrators Assn.; Hotel del Coronado, Coronado, Cal.; exec. V. P., Joseph Chrismar, Dwight Bldg., Kansas City, Mo.

Feb. 7-8—Utah Nutrition and Production Conference; Utah State Agricultural College, Logan; sec., Dr. Lawrence Morris, Animal Husbandry

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Feb. 17—Washington State Feed Assn.; Chinook Hotel, Yakima; sec., John G. Wilson, 814 Second Ave. Bldg., Seattle 4, Wash.

Feb. 19-21—Ohio Grain & Feed Dealers Assn.; Commodore Perry Hotel, Toledo; sec., L. E. Folsom, 222 Chatham Rd., Columbus 14, Ohio.

Feb. 22-23—Virginia Polytechnic Inst. Nutrition School; Hotel Roanoke, Roanoke, Va.; chmn., Paul M. Reaves, V. P. I., Blacksburg, Va.

Feb. 27-28—Midwest Feed Mfrs. Assn.; Hotel Muehlebach, Kansas City; exec. V. P., Lloyd S. Larson, 20 West Ninth Street Bldg., Kansas City, Mo.

March 7—Distillers Feed Conference; Sheraton-Gibson Hotel, Cincinnati, Ohio; sec., Lawrence Carpenter, 1232 Enquirer Bldg., Cincinnati 2, Ohio.

March 15-16—Oregon Feed and Seed Dealers Assn.; Multnomah Hotel, Portland; sec., Leon Jackson, 809 Lewis Bldg., Portland 4, Ore.

March 18-23—Grain Elevator and Processing Superintendents; Muehlebach Hotel, Kansas City, Mo.; sec., Dean M. Clark, "Grain," Board of Trade, Chicago 4, Ill.

March 22-23—Maryland Nutrition Conference for Feed Mfrs.; Shoreham Hotel, Washington, D.C.; chmn., Dr. G. L. Romoser, U. of Md., College Park, Md.

April 5—Texas Feed Manufacturers, Hotel Texas, Fort Worth; sec., Monroe U. May, P.O. Box 6666, Dallas 19, Texas.

April 6-7—Texas Grain & Feed Dealers Assn., Hotel Texas, Fort Worth; sec., Ben Ferguson, 614 Meacham Bldg., Fort Worth 2, Tex.

April 12-14—California Hay, Grain & Feed Dealers Assn.; Ambassador Hotel, Los Angeles; sec., John F. Gilmore, 1400 Tenth St., Sacramento 14, Cal.

May 3-5—Kansas Grain & Feed Dealers Assn.; Kansan Hotel, Topeka; sec., O. E. Case, 901 Wiley Bldg., Hutchinson, Kansas.

May 21-22—National Cottonseed Products Association; Statler-Hilton Hotel, Dallas; sec., John F. Moloney, 19 S. Cleveland St., Memphis, Tenn.

May 23-25—American Feed Manufacturers Assn.; Morrison Hotel, Chicago; sec., W. T. Diamond, 53 West Jackson Blvd., Chicago 4, Ill.

June 4-5—Eastern Federation of Feed Merchants; Hotel Commodore, New York; sec., Howard J. Benson, Eastern Federation of Feed Merchants, Sherburne, N.Y.

June 4-5—Georgia Feed & Poultry Conference; Dinkler Plaza Hotel, Atlanta; sec., Will L. Kinard, 208 William-Oliver Bldg., Atlanta 3, Ga.

June 6-9—Grain Processing Machinery Manufacturers Assn.; French Lick Springs Hotel, French Lick, Indiana; sec., Raymond J. Walter, 511 Fifth Ave., New York 17, N.Y.

June 11-12—Montana Nutrition Conference; Montana State College, Bozeman; chmn., O. O. Thomas, Montana State College Agricultural Experiment Station, Bozeman, Mont.

June 15—Pacific Northwest Grain Dealers Assn.; Davenport Hotel, Spokane, Wash.; sec., Pete Stallcop, 418 Peyton Bldg., Spokane, Wash.

June 17-19—Indiana Grain and Feed Dealers Assn.; Purdue Union Bldg., Purdue University, Lafayette, Ind.; sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis, Ind.

June 28-30—Association of Southern Feed and Fertilizer Control Officials; Hotel Roanoke, Roanoke, Va.; sec., Bruce Poundstone, U. of Ky. Agricultural Experiment Station, Lexington 29, Ky.

Oct. 4-5—Texas Nutrition Conference; Texas A&M, College Station, Texas; chmn., J. R. Couch, Dept. of Poultry Husbandry, Texas Agricultural & Mechanical College, College Station, Texas.

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Drugs Being Tested At Delaware Station

NEWARK, DEL. — A series of drugs, including two new ones still under wraps and not available commercially, are being tested on 12 pens of birds at the University of Delaware Agricultural Experiment Station at Newark.

Dr. M. S. Cover, poultry research specialist at the university, said it will be a few weeks until any results are available. In all, five drugs will be tried out on the birds to find out how effective they are in prevention and control of chronic respiratory disease.

Dr. Cover said two groups of the birds will be given a drug called N.F. 180 or furazolidone. On the one group, it will be tried as a preventive before they get the disease; on the other, it will be used as treatment after they get the disease. Penicillin and Streptomycin, injected, will be tried on two other groups of birds. The new, and as yet unnamed drugs, will be tried on an additional two groups of birds.

To check against the results of these various treatments, there will also be a group of birds at the university farm which receive no treatment at all; also a second group which gets no treatment but are actually inoculated with the disease to find out how severely it affects them in the next month.

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Inside Information on NiCarbazin

No. 2 *in a series*

With the introduction of a new product such as NICARBAZIN, many technical questions arise. To answer these questions for the feed industry, Merck research, production, and sales executives hold regular round-table discussions. What follows is a report of the answers these men gave at a recent meeting to questions of broad interest to the trade.

Q. How does NICARBAZIN differ from other coccidiostats?

A. *Research Chemist:* It is unique in chemical structure and in the type of protection it provides. NICARBAZIN does what other coccidiostats were not able to do. It can actually cut coccidiosis losses to zero—rather than just cutting down the number of birds affected with the disease. In addition, coxy tissue damage and bloody droppings are practically eliminated.

★ ★ ★

Q. Is NICARBAZIN in feeds as nontoxic for other farm animals as it is for poultry?

A. *Pathologist:* All animals tested tolerate NICARBAZIN satisfactorily. Hogs, for example, have suffered no ill effects—over a period of several months—from a daily food intake of eight pounds containing one per cent of NICARBAZIN.

Q. Will NICARBAZIN separate from other components in a feed after proper mixing?

A. *Analytical Chemist:* Tests indicate that there is little or no segregation of the active ingredient in NICARBAZIN MIXTURE 25% when incorporated into feeds according to directions.

★ ★ ★

Q. Is there a reduction in overall mortality, as well as a drop in coccidiosis mortality, when NICARBAZIN is used?

A. *Veterinarian:* Several poultry diseases are caused by secondary infections which may develop in birds already weakened by such conditions as coccidiosis. Because NICARBAZIN practically eliminates tissue damage, NICARBAZIN-protected birds are better able to resist the secondary infections.

Q. Does NICARBAZIN affect fertility and egg production in replacement flocks?

A. *Veterinarian:* NICARBAZIN may be fed until birds are 18 to 20 weeks of age, without adverse effect on egg production or fertility.

★ ★ ★

Q. What other benefits may be expected after NICARBAZIN removes the coccidiosis problem?

A. *Veterinarian:* Birds should show a gain in feed efficiency. In addition, they will weigh more, dress out heavier, and show a better fleshing color. These benefits mean production costs will be cut and birds will command better market prices.

NiCarbazin Means
No Coccidiosis Problems

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Manufacturing Chemists
RAHWAY, NEW JERSEY

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AT DOG FOOD CONVENTION
SPEAKER ANSWERS QUERY:

Where Is the Market?

By J. P. Napier

EDITOR'S NOTE: In the accompanying article, J. P. Napier, executive vice president of the A. C. Nielsen Co., a Chicago marketing research firm, analyzes trends in the U.S. which lead him to the conclusion that the dog food market is far from saturated. He does, however, recommend several moves for keeping the industry on an even keel even when the saturation point is approached. This is the text of a talk he gave before the recent Dog Food Convention of the American Feed Manufacturers Assn. in Chicago.

Since we first began doing marketing research work on dog food back in 1940, I have never ceased to be amazed at the size of the market and the buoyancy of demand for the products. Few, if any, of the 100-odd fields which we audit in retail stores have shown the steady gains year after year which we have reported on dog food.

One way to answer the question, "Where Is the Market?" is to present some facts which will help dog food industry people determine where their market is relative to its ultimate potential. Consider that, for the year ended June 1, 1955, total dog food sales through grocery stores were 2.55 times as great as in 1941, on the pound basis, were 3.63 times as great as in 1941 on the dry equivalent pound basis, and were 5.23 times as great as in 1941 on the consumer dollar basis.

As of the latest 12 months total dog food volume was worth more dollars to the grocer than toilet soap, more than canned peas and canned corn combined, more than canned peaches, more than all the prepared mixes, and in fact more than canned baby foods.

All of which is quite an achievement for an industry which has never taken a precise census of its customers and prospects or the trend in those respects! How can we appraise the potential of the industry if we don't know the number and trend of customers and prospects? Such information would be highly helpful (and we recommend that the taking of a periodic dog census would be a proper function of the Dog Food Division of AFMA), but we can see how far we've come by comparing accomplishments with certain related trends. Consider:

1. That human population in the U.S. has increased 22% since 1941. More important the number of youngsters in the pet-possessing range is up even more sharply. If you define this range as 5 to 14 years, then you are talking about 32,000,000 youngsters today as against 22,000,000 in 1941—a gain of approximately 40%. Furthermore, it should be a source of great comfort to members of the dog food industry to know that regardless of whether the human birth curve turns down next year or the year after or whenever, we know that the number of youngsters in the 5 to 14 year group will continue to increase through 1960! The presence of a record crop of youngsters in the 0 through 4 year range guarantees that!

2. That purchasing power per capita for the latest 12 months was 27% above the 1941 level. This index automatically makes allowance for changes in population and in price level. It means that the average person in these U.S. is better off in terms of purchasing power to the extent of 27%.

This rate of improvement should, of course, be greatly surpassed by items of a semi-luxury nature or of a convenience nature. Prepared dog foods belong in both of these categories. We know of no all-inclusive index for either semi-luxury products or convenience products, but our records show that convenience items in a selected cross section of commodities which we audit have more than doubled their volume in the past five years. In that interval dog foods have shown a tonnage gain of only 43%—a gain which does not appear to have been out of line or to have approached the potential!

3. That the trend toward suburban living and single family units has favored the consumption of dog food. Between 1940 and 1950 the population living in suburbs of U.S. cities increased 36% as compared with a total population increase of 14%.

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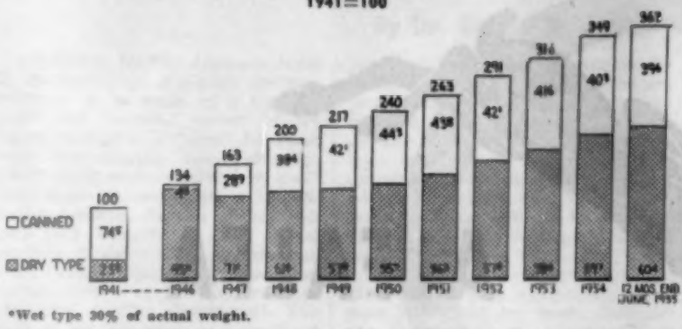
1941=100



*Wet type 30% of actual weight.

There is nothing in the record to show that this trend is being reversed—on the contrary it is being accelerated.

Another way of looking at the same development is the construction of single family units. For the 10 years through 1940 the average was less than 300,000 "starts" per year in non-farm areas. For the latest 10 years the average is just under 1,000,000. Faced with this kind of a record the gain for dog foods does not seem in any sense excessive or to have exhausted its potential.

4. That grocery store dollar volume of all commodities combined was approximately 3.4 times as great for the latest 12 months as for 1941. If we cut this back in order to make a rough allowance for the advance in food prices, we come up with a gain of something like 70% for grocery store tonnage. Compared with this 70% gain the 155% tonnage increase for dog foods in the same interval does not seem unreasonable or excessive when it is considered that the market has favored products pertaining to children, products of a semi-luxury nature, products connoting health and convenience, and products adapted to suburban living and single family dwellings.

5. That dog food advertising in consumer magazines, daily newspapers and network radio and TV has approximately doubled since 1950. As I mentioned before, dog food volume has risen only about 40% in that interval.

Far from Saturated

These various factors tell me that the answer to the question, "Where Is the Market?" is that the dog food market is far from saturated. And the fact that it is continuing to gain at a more rapid rate than most other grocery products underlines this conclusion. However, as a word of warning from a man who has been studying trends in many fields for over 20 years and who has seen the divergent reactions of members of an industry to the first evidence that such an industry is reaching saturation, let me make just two points:

A. Before the leveling-off period occurs, the industry should set up an organized system for gathering information on the extent of the saturation. As Mr. Kettering of General Motors said, "Research is an organized program for finding out what to do when you can no longer do what you are doing now." This applies equally to marketing research and product research.

The reasons for developing such a program now are several, including the facts that the industry can best afford to do so in times when the industry is expanding; that it takes time to make and analyze and act upon the research, and that actions of the industry based on the research may postpone the day of saturation!

B. Furthermore, it is my observation that any industry effort which is aimed at broadening a market reduces the tendency to cut price and slash promotional expenditures which are so often characteristic of a market nearing the point of saturation. In such times it's important to accentuate the positive!

There are other facets to this question of "Where Is the Market?" such as its location by seasons of the year, by areas, by size of town, type and size of store, characteristics of family and even type and size of dog. All of these facts exist. It's a matter of going out and digging them up, via research. We can throw light on some of these questions here.

By seasons of the year, the peak consumer sales movement for dog food is in October-November, 16% above the February-May valley. This is the national average and varies by areas and size of town as well as by type of dog food. Within the dry type, for instance, the baked items showed a steadier seasonal than was true of the meals.

By areas, metropolitan New York accounts for approximately 7% of the canned volume, 10% of the baked dry type and less than 3% of the meals and other dry types. By contrast, the Southwest (Louisiana, Arkansas, Oklahoma, Texas and New Mexico) accounts for 11% of the canned volume, about 3% of the baked items and 11% of the meals and other dry types.

By size of community, the canned share of total equivalent pounds of dog food sales ranged from 54% in New York and Chicago to 49% in the next 19 largest markets to 29% in the Class D counties in which the population is more than 90% unincorporated and rural.

All of these facts add up to a market which shows sharp differences by sections of the country, by size of community and other breakdowns. These differences put a premium on knowing the score, through research. At the same time there is a picture of a big market, a market which is growing — and growing faster than most grocery products — a market which apparently has a long, long way to go before realizing its potential.

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NEW YORK — The H. Reisman Corp., with offices at 114 Liberty St., New York 6, has been named eastern sales representative for debittered brewer's yeast, U.S.P., for the yeast sales division of the Joseph Schlitz Brewing Co., Milwaukee, Wis.

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Recent Advances in Poultry Nutrition

By Dr. Gerald F. Combs

EDITOR'S NOTE: Advances made in the knowledge of poultry nutrition continue to be made at a startling pace, and frequent review of the latest findings is a "must" for those feed men directly responsible for formulation and certainly of great importance to many others less directly involved. Such a review was presented recently at the annual meeting of Association of American Feed Control Officials in Washington by Dr. Combs of the University of Maryland poultry department. The text of his discussion is reproduced here.

v v

The progress made in the field of poultry nutrition in the past few years has been outstanding—a fact all the more significant because poultry feeds constitute approximately 60% of all formula feeds.

To illustrate this progress, let me cite some results obtained in the 1955 Maryland junior broiler production project which indicated an improvement in broiler production efficiency of approximately 10% over that of the previous year. In 1954, some 56 flocks of 100 birds each in the broiler area of Maryland produced broilers which averaged 3.29 lb. at 10 weeks of age with an average of 2.74 lb. of feed per pound of broiler. This year, 63 such flocks averaged 3.27 lb. at nine weeks of age with only 2.5 lb. of feed per pound of broiler. According to their records, the out-of-pocket cost was reduced from 19.7 to 17.8¢ per pound. This is progress much of which may be attributed to the use of improved feeds.

Other results which show the improvement in broiler rations have been summarized in Table 1. Included are studies conducted at the University of Maryland Experimental Farm located at Salisbury where broilers are reared under practical conditions. In our last trial, 4,000 broilers averaging three pounds were produced in nine weeks with an average of 2.27 lb. of feed required per pound of weight. Other results are included where even better feed efficiencies were obtained. In one battery trial using an experimental ration containing 15% added stabilized fat, 3-lb. male broilers were produced in seven and one half weeks with as little as 1.6 lb. of feed per pound of weight.

Certainly, many factors are responsible for this marked improvement in present day feeds. One can cite, for example, the availability of vitamin supplements which permit feed manufacturers to add vitamins A, D, E and K, riboflavin, niacin, pantothenic acid, choline, and vitamin B_{12} routinely in practical feeds at relatively low cost. The availability of methionine has made possible improvement in protein quality in certain types of rations. The widespread use of antibiotics for growth stimulatory purposes as well as for control and prevention of certain disease conditions during periods of stress also has been quite important.

Chemical antioxidants have made possible the use of added fat at relatively high levels in the formulation of far more efficient feeds than were used previously. Workers at Texas A&M have shown the value of supplementary vitamin E in turkey breeder rations as measured by improved hatchability. Studies on unidentified growth factors have revealed that an inorganic factor is present in the ash of certain crude supplements (distillers dried solubles, dried whey and fish solubles). These are examples of some of the recent nutritional developments.

Progress in Efficiency

Perhaps the most striking progress has been made in improving the efficiency of poultry rations. At the same time, continued emphasis has been given to the formulation of rations which will produce poultry products most economically. Since the Connecticut group demonstrated in 1947 that high energy rations could be used to advantage in practice, the energy content of poultry feeds has been steadily increasing. The recent availability of properly stabilized surplus fat at suitable prices has provided an economical means of formulating rations with still higher levels of energy. Some broiler feeds today contain up to 20% more productive energy per pound than similar feeds normally contained a few years ago. At first many rations were not as efficient as was expected despite their high energy levels. Feather pulling

Lilly

REPORT TO CATTLE FEEDERS

These 24 tests tell the 'Stilbosol' story...

Here, in one table, are the results of twenty-four carefully conducted experiments made at agricultural schools and research farms. They show how cattle fattening rations containing 'Stilbosol' can improve profits over identical rations without 'Stilbosol.'

Conditions under which these experiments were carried out varied widely. Cattle were of different quality and weight; rations fed went from high roughage to high grain; a variety of protein supplements was used; and climate, temperatures, and handling differences naturally varied.

Yet, results from all these widely separated sources were remarkably consistent. Most of the extra gains due to diethylstilbestrol were more than 20% when 'Stilbosol' was fed at the 10 mg. per day level with high grain rations; and saving in feed cost seldom fell below 10%.

Where carcass measurements were made, there was very little to choose between check-lot animals and the hormone-fed animals . . . in either direction.

Many feeders have found that the results reported from college experiment stations, feed manufacturers' research farms, and elsewhere, have been on the conservative side.

This mass of reliable evidence is ample proof that 'Stilbosol' is an important new profit tool to use in your feedlot.

SUMMARY OF 24 DIETHYLSTILBESTROL CATTLE FEEDING EXPERIMENTS

Where Experiments Were Conducted Agricultural Colleges	Kind of Cattle	Type of Ration	No. Cattle		Av. Daily Gain			% Feed Saved Due to Diethylstilbestrol	Dressing %		Fed. Grade*		No. Days on Experiment
			Check Lot	Diethylstilbestrol	Check Lot	Diethylstilbestrol	% Increase		Check Lot	Diethylstilbestrol	Check Lot	Diethylstilbestrol	
Iowa AH 188 (1954)	Steers	Grain	8	16	2.13	2.67	25	13	60.7	61.1	8.0	8.4	43
Iowa AH 189 (1954)	Steers	Grain	8	24	2.23	2.72	22	12	60.0	60.4	6.5	6.6	112
Iowa AH 192 (1954)	Heifers	Grain	8	16	2.03	2.29	13	13	58.4	58.0	7.0	7.0	113
Iowa FSR 107 (1954)	Steers	Roughage	20	20	1.10	1.21	10	10	—	—	—	—	127
Iowa AH 193 (1954)	Steers	Half & Half	8	8	1.71	1.99	16	11	61.3	61.5	7.0	6.6	243
Iowa AH 194 (1954)	Steers	Grain	8	14	2.36	2.53	8	7	61.8	61.2	7.0	6.4	120
Iowa (July 1955)	Steers	Roughage	40	40	1.00	1.08	8	8	—	—	—	—	119
Iowa (July 1955)	Calves	Grain	9	18	2.22	2.45	10	6	—	—	—	—	224
Colo. No. 605 (1955)	Steers	Grain	9	8	2.30	2.90	26	21	—	—	—	—	84
Mich. (June 1955)	Steers	Grain	14	14	2.30	2.60	13	20	61.9	62.0	6.7	7.4	98
Nebr. 71 (1955)	Steers	Grain	15	15	2.02	2.40	19	12	64.0	63.2	8.8	8.6	112
Ohio No. 94 (1955)	Steers	Grain	21	21	2.17	2.47	14	13	—	—	—	—	84
Purdue 139 (1955)	Steers	Grain	10	10	2.33	2.64	13	11	—	—	7.3	6.6	123
Purdue 148 (1955)	Steers	Grain	9	9	2.71	3.30	21	18	—	—	—	—	98
Purdue 149 (1955)	Calves	Grain	9	9	2.37	2.84	20	15	—	—	—	—	98
Tenn. (1955)	Steers	Grain	24	16	1.38	1.77	28	18	57.5	57.8	5.0	5.0	98
Texas (April 1955)	Steers	Grain	10	10	2.38	3.03	27	11	59.8	59.8	5.8	5.4	120
Feed Manufacturers													
Mfgr. T (1955)	Steers	Half & Half	10	10	2.35	2.91	24	12	—	—	—	—	56
Mfgr. U (1954)	Steers	Grain	10	10	2.75	3.37	23	14	60.4	59.8	7.1	7.4	70
Mfgr. V (1954)	Steers	Grain	9	10	2.03	2.27	12	5	—	—	10.0	10.2	117
Mfgr. W (1955)	Steers	Grain	16	16	2.28	2.70	18	7	62.30	62.29	6.3	7.5	180
Mfgr. X (1955)	Steers	Grain	30	30	2.84	3.08	8	13	57.40	57.33	7.0	7.1	96
Mfgr. Y (1955)	Heifers	Grain	35	35	2.35	2.69	15	13	59.48	59.91	5.0	5.0	62
Mfgr. Z (1955)	Steers	Grain	12	12	2.18	2.76	27	19	59.58	59.60	8.0	8.0	150
Average All Experiments							17.8	12.6	60.3	60.3	7.0	7.1	

*Federal grade based upon prime plus=12, prime=11, prime minus=10, choice plus=9, choice=8, choice minus=7, good plus=6, good=5, good minus=4, commercial plus=3, commercial=2, commercial minus=1.

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became so prevalent that debeaking came to be a general practice in broiler flocks. This indicated that something was not completely balanced in these high energy formulas.

It appears rather obvious now that in the midst of other important developments, the energy levels of feeds had been increased without adequately increasing the levels of other critical nutrients, particularly protein, in these rations. Perhaps this recognition on the part of nutritionists and feed manufacturers has contributed most to the improvement of poultry feeds this past year. More emphasis has been given to supply an adequate level of protein, complete in all essential amino acids, in order to balance the level of energy in feeds. Feed manufacturers are able to supply quite generous levels of vitamins and minerals without too much concern about cost, but this is not the case with protein (as protein is far more costly). By far the largest part of the feed dollar is used to buy energy. This means that considerable attention should be given to maintain the proper ratio of energy (calories) to protein (high quality) if efficient and economical rations are to be formulated.

Based on studies with broilers at the University of Maryland, it would apear that growing chickens eat primarily to satisfy their energy requirements provided that the ration is properly fortified with all other essential nutrients. If, however, the ration is sub-optimal in protein for instance, then broilers tend to overeat in energy in an effort to obtain sufficient protein. When the protein deficiency is marked or if the quality of the protein is inferior, they are not able to completely compensate for the deficiency by overconsumption; hence, the growth rate is impaired. The additional feed energy which is consumed under such conditions is deposited in the body in the form of fat, largely in the place of water.

Studies with broilers reared under field conditions have shown that during the finishing period up to 17% more feed energy was consumed per unit of gain when the ratio of energy to protein in the ration was too high. Under these conditions, the amount of fat deposited in the carcass is increased, the broilers tend to pull feathers, feed efficiency is lowered and growth is somewhat less rapid.

Consequently, the protein requirement for chickens can no longer be accurately stated in terms of percent of the ration without qualifying the level of energy involved. High levels of protein are wasteful and usually expensive, and sub-optimal levels of protein are inefficient. Accordingly, broiler rations differing in calorie-protein ratios have been compared during the starting and growing periods in an effort to arrive at a more nearly accurate means of determining the proper protein level for a particular broiler feed.

Our studies indicate that a ratio of approximately 42 calories of productive energy per pound of ration for each percent crude protein in the feed is satisfactory during the first seven weeks while a ratio of 48 to 50 is suitable for broilers after seven weeks of age. Similar estimates have been calculated for hens laying at different rates of production. High producing hens laying at the rate of approximately 80% are estimated to require a ration which contains no more than 56 calories of productive

(Continued on page 45)

Table 1—Recent Improvements in Broiler Rations

Ration	Breed or strain:	Approx. No. broilers	Age in wks.	Average weight lbs.	Feed/unit weight
1953	N. H.* (Source—Md. Misc. Pub. No. 171)	500	10	2.35	2.54
1955	N. H.* (Source—Md. Misc. Pub. No. 237)	2,000	9	3.02	2.37
1955	Lancaster Specials* (Source—Md. Misc. Pub. No. 237)	2,000	9	3.02	2.38
1955	Vantress crossbreds* (Source—Unpublished U. of Md.)	4,000	9	3.02	2.27
1955	Barred Plymouth Rocks* (Source—Slinger, et al, O. A. C.)	120	10	3.59	1.96
1955	N. H. X. Harco Orchard crossbred males (Source—Singsen, et al, U. of Conn.)	24**	8	3.00	2.03
1955	Vantress Red crossbred males (Source—Md. Misc. Pub. No. 226)	20**	7½	2.96	1.72
1955	Vantress Red crossbred males (Source—Md. Misc. Pub. No. 226)	20**	7½	3.01	1.60

*Both sexes. **Groups.

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Disappearance of Corn in 1954-55 Smallest in 7 Years

WASHINGTON—Disappearance of corn (grain only) during the 1954-55 season totaled 2,549 million bushels, the second smallest amount in 13 years and the smallest since 1947-48. This total compares with a disappearance of 2,727 million bushels in 1953-54 and 2,816 million the five-year (1949-53) average. The disappearance figures are contained in the quarterly corn market summary issued in October by the USDA.

The decrease in quantity used for feed caused the drop, the total in the 1954-55 season being 2,195 million bushels as against 2,380 million bushels the previous year and 2,450 million the five-year average.

The number of grain-consuming animals units last season is estimated at 174 million compared with 168.4 million the previous season and 170.1 million the average. Based on these figures, the USDA report states, 12.6 bu. of corn were fed per animal unit last season, 14.1 bu. during 1953-54 and 14.4 bu. the five-year average. The number of animal units to be fed during 1955-56 is currently estimated at 178 million.

Commercial disappearance of corn increased last season with a larger quantity used for wet milling. The wet milling industry used 138.6 million bushels or about 10 million more than in 1953-54. The use of corn for alcohol during the past season totaled 22 million bushels or about a million less than the previous season. The quantity used for dry milling, breakfast food and farm household use was about unchanged and is estimated at 94 million bushels. Exports of corn, the report states, were slightly smaller, totaling 88.7 million bushels as against 89.6 million in 1953-54.

Sales of corn by the Commodity Credit Corp. Oct. 1, 1954, through Sept. 30, 1955, amounted to 149.4 million bushels. This compares with 202.8 million bushels sold by CCC during the 1953-54 season. Approximately one third of the sales were for export.

Corn prices the first three weeks in October were sharply below a year ago. Prices averaged about 31¢ bu. below a year ago at the principal Midwest markets. No. 2 yellow corn at Chicago averaged $1.28 bu. in October compared with $1.33 in September and $1.59 in October, 1954. The national average price support rate for the 1955 crop is $1.58 bu. compared with $1.62 for 1954-crop corn.

Based on Chicago prices, a cwt. of barrows and gilts would buy 11.9 bu. of No. 3 yellow corn the first three weeks in October compared with 12.1 during October a year ago and 14.9 two years ago. The less favorable ratio, USDA says, is due to the decline in hog prices.

Corn supplies for 1955-56 are estimated at 3,800 million bushels, 228 million more than for 1954-55. This total includes this year's expected production of 3,118 million bushels, 5% more than last year. Carryover stocks of corn in all positions Oct. 1 were the largest of record and amounted to 1,024 million bushels.

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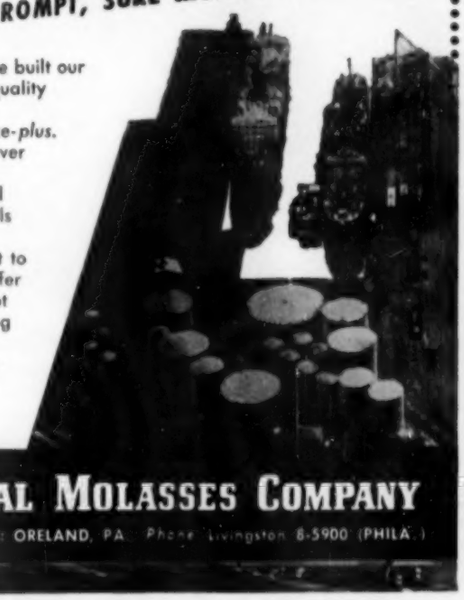

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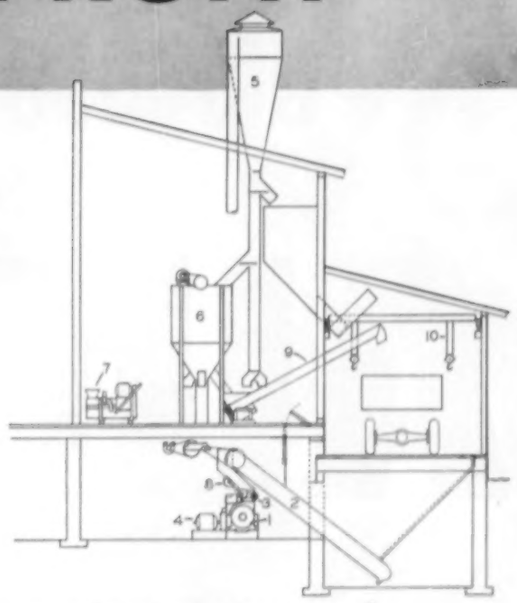

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POULTRY NUTRITION

(Continued from page 40)

energy for each percent of crude protein.

To illustrate the differences in protein levels which would result by applying this ratio to rations varying in energy content, laying rations containing 830, 880, 930 and 980 calories of productive energy per pound should contain approximately 14.6, 15.5, 16.4 and 17.3% protein, respectively, in order to maintain comparable calorie-protein ratios. This approach tends to explain some of the differences in results obtained by various research groups who used rations differing widely in energy level.

Tentative Only

The calorie-protein ratios mentioned above for broilers and laying hens are considered as tentative ratios only since other factors would be expected to influence them. Among these would be quality of protein, rate of growth or rate of egg production in relation to body size, environmental temperature, degree of fattening desired, differences in composition values used in calculating the ratio and finally the changes in relative market cost of energy and protein as ingredient prices change.

Table 2 presents the estimated feed requirements of broilers as influenced by the energy level and C/P ratio of the feed. Although these values are estimates based in part on two field trials conducted at the University of Maryland, they do illustrate the marked differences which one can expect in rations of comparable adequacy except for their energy and protein content. The results shown in the table apply only to broilers which will reach three pound weights in nine weeks of age. If a longer period of growth is required, additional feed per unit of weight would be required.

Another interesting development has been the observation by several groups that the addition of relatively high levels of fat to properly fortified rations improves the growth rate. In most of these studies, the addition of 10 to 15% fat has improved growth by approximately 10 to 15%. In one trial, we observed improved growth when as much as 30% fat (corn oil) was included in the ration. Whether or not this improved growth rate is due to improved energy density or palatibility of the feed or to some property of the fat per se has not been determined. This development, however, is of extreme interest and does have possibilities for limited practical application at the present time.

Along with the increased attention to the calorie-protein ratios and use of fats, more consideration has been given to the maintenance of proper protein quality in poultry rations. In this connection, an explanation for the rather inconsistent results obtained previously from the addition of DL-methionine to brioler and starting feeds has been found by the DuPont group. Baldini and co-workers have reported that the level of methionine needed is related to the energy content of the ration. This represents a further amplification of the concept of balancing nutrients in feeds. The use of supplemental DL-methionine on this basis has resulted in the expected response as long as methionine is the first limiting amino acid. Work at Maryland supports this concept in that the methionine requirement expressed as a percent of

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Table 2—Estimated Amount of Feed Required to Produce a Pound of Broiler, When 3-lb. Weights Are Reached in Nine Weeks, as Influenced by Energy Content and Calorie-Protein Ratio of Feeds

		Cal./Lb. (Productive Energy)								
		Starting Rations (0 to 7 weeks)								
C/P Ratio		838	860	882	904	926	948	970	992	1,014	1,036
		Finishing Rations (7 to 9 weeks)								
Starter	Finisher	910	935	960	985	970	995	1,000	1,015	1,030	1,045
41	47	2.65	2.60	2.55	2.50	2.45	2.40	2.35	2.30	2.25	2.20
42	48	2.68	2.63	2.58	2.53	2.48	2.43	2.37	2.32	2.27	2.22
44	50	2.73	2.67	2.62	2.57	2.51	2.46	2.41	2.35	2.30	2.25
46	52.5	2.75	2.70	2.65	2.59	2.54	2.49	2.44	2.38	2.33	2.28
48	55	2.81	2.75	2.70	2.65	2.59	2.54	2.49	2.43	2.38	2.33
50	58	2.94	2.84	2.80	2.76	2.69	2.64	2.58	2.53	2.49	2.42

Calorie levels of the broiler starting and finishing rations are indicated. It is apparent that efficiency of different feeds can vary greatly depending on their potency and energy-protein balance.

If it takes longer than nine weeks to produce a 3-lb. broiler, values in the table do not apply because during a longer period additional feed will be required per unit of weight since more will be used for maintenance purposes.

Values are based in part on two field trials conducted at the University of Maryland where different C/P ratios were used in high-energy starting and finishing rations. Estimated feed efficiencies for lower energy feeds then were calculated assuming that these feeds also would be equally adequate.

protein was increased when the calorie-protein ratio was widened.

Mattersen et al., at the University of Connecticut, have reported that the addition of DPPD to chick rations increased utilization of vitamin A as measured by liver storage as well as the carotenoid level in the blood. These results are explained on the basis of improved stability of vitamin A and carotenoid pigments when this antioxidant was used. In addition, losses of vitamin E from natural sources are reduced by diphenylparaphenylenediamine (DPPD) during storage of feeds (Singsen et al.).

Unidentified Substance

The most spectacular findings during the past year were reported by the Cornell and Texas groups relating to the existence of an unidentified inorganic substance capable of promoting growth of chicks fed highly purified rations. Exhaustive studies have been conducted by these groups in an effort to determine the unidentified mineral involved without success. Reid et al. (Texas) obtained a 15% growth response with either the ash from 3% distillers solubles or the reconstituted ash equivalent based on spectrographic analysis. Both groups agree, however, that there are still unidentified nutrients of an organic nature present in various crude supplements.

Morrison et al. (Cornell) obtained approximately 25% increase in growth with the ash of distillers solubles but a 40% increase from the original unashed material. At Maryland, we have obtained ash response in poults two out of three times with DDS ash but no responses were obtained with chicks in three out of three trials. A combination of the ash from fish solubles, dried whey and alfalfa meal, however, did promote chick growth slightly in two tests. In view of a recent report from

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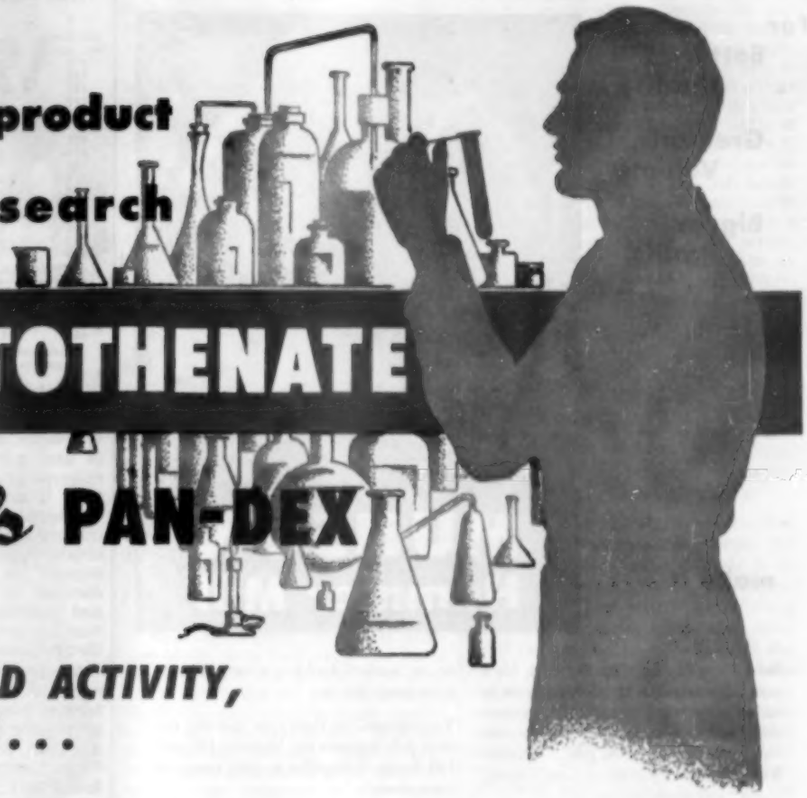

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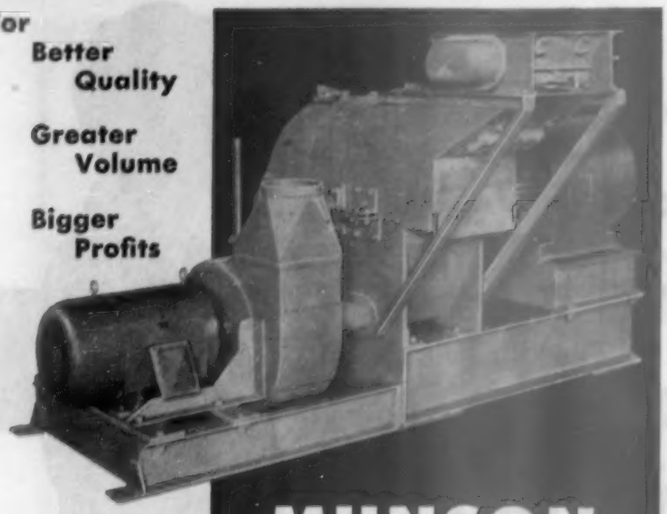

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Table 3—Practical Starting Rations Used in 1955 Maryland Junior Broiler Production Project, Poultry Department, University of Maryland

Av. 4-wk. wt., gms.	F/G	Prod. Eff.	% Protein Guar.	% Protein Analysis	% Protein Dif.	% Fat Guar.	% Fat Analysis	% Fat Dif.	% Crude Fiber Guar.	% Crude Fiber Analysis	% Crude Fiber Dif.
472	1.75	270	23	23.9	+1.9	3.0	4.5	+1.5	3.6	2.6	−0.9
483	1.81	267	23	24.0	+2.0	3.5	4.5	+1.0	4.5	3.7	−0.8
493	1.90	259	23	24.6	+1.6	5.0	5.5	+0.5	3.0	3.3	+0.3
481	1.92	251	23	23.8	+1.8	3.0	5.2	+2.2	5.0	3.9	−1.1
483	2.00	240	20	20.8	+0.8	3.0	3.4	+0.4	5.0	3.8	−1.2
483	2.06	240	21	21.5	+0.5	3.5	4.1	+0.6	4.0	3.6	−0.4
471	1.97	239	23	23.9	+0.9	4.0	4.3	+0.3	5.0	3.8	−1.2
470	2.02	232	23	25.4	+1.4	4.0	4.3	+0.3	4.5	3.3	−1.2
458	1.97	229	23	24.3	+1.3	4.5	4.8	+0.3	4.75	3.9	−0.85
447	2.02	221	20	21.6	+1.6	5.0	5.3	+0.3	4.5	3.5	−1.0
440	2.05	215	22	23.9	+1.9	3.0	3.2	+0.2	5.0	2.9	−2.1
429	1.99	215	20	24.3	+4.3	3.5	3.7	+0.2	5.0	3.3	−1.8
470	2.36	213	22	24.7	+2.7	4.5	4.8	+0.3	5.0	3.6	−1.4
470	2.30	204	18	20.3	+2.3	3.0	4.3	+1.3	7.0	4.3	−2.7
443	2.19	202	20	21.3	+1.3	4.0	4.5	+0.5	5.5	4.8	−0.7
439	2.24	196	21	22.9	+1.9	3.0	4.4	+1.4	4.0	3.8	−0.2
388	2.56	150	20	23.2	+3.2	3.5	3.5	±0.0	6.0	5.0	−1.0
361	2.57	140	20	21.1	+1.1	3.0	4.8	+1.8	5.0	5.0	±0.0
458 Av.	2.09	217	21.3	23.0	+1.8	3.6	4.4	+0.8	4.8	3.8	−1.0
568	1.46	389	Maryland Experimental High Efficiency Ration								
456	2.00	228	A. N. R. C. Standard Reference Diet								

Average of two trials, involving 20 male Vantress Red crossbred chicks per ration. Analyses conducted by Maryland Inspection and Regulatory Service.

Prod. eff. = $\frac{\text{wt., gms.}}{\text{feed/gain}}$

Wisconsin showing that the feeding of used poultry litter increased the response of chicks to unidentified factors, it may be that differences in the bacterial population in our laboratory may explain our inability to obtain consistent responses from inorganic ash supplements. The use of distilled water, C.P. grade minerals and acid-washed Drackett C-1 protein has not rendered the basal chick diet responsive to ashed supplements.

Menge and others (U.S. Department of Agriculture), in studies on feather meal have found that it improves the growth rate of chicks fed a ration designed to measure "fish factor" response. They have recently found that the inclusion of the sodium silicate equivalent of 4% feather meal or the ash equivalent of 4% feather meal also improved chick growth. Couch (Texas A&M) recently reported that inorganic ash from distillers solubles, dried whey, or fish solubles markedly improved the growth of broiler chickens reared under practical conditions. In this test, however, the negative control group weighed approximately 2 lb. only at 10 weeks of age. In view of the extreme difficulty of obtaining consistent responses under our laboratory conditions (in our laboratory) using highly refined techniques, one might postulate that the unidentified inorganic constituent may have an indirect rather than a direct effect under these conditions.

In addition to this inorganic factor activity (the unidentified factor activity of certain inorganic materials), there is general agreement that at least two and perhaps three unidentified organic factors are required for optimum growth of chicks. One of these is generally termed the "fish factor;" the second, the "whey fac-

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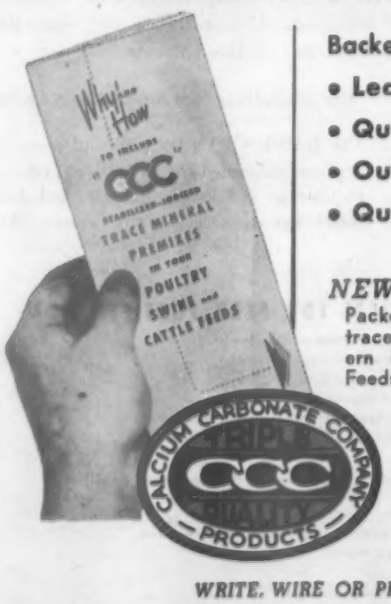

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tor;" and recent findings of the Illinois and Cornell groups suggest that distillers solubles (and perhaps other fermentation products) contain a third factor. Whether the third factor is identical with the ash factor is not known. No doubt these factors occur as mixtures in many crude ingredients, but the following supplements have been reported to have unidentified factor activity: Fish meal, fish solubles, liver products, crab meal, whale solubles, meat scrap, brewers yeast, distillers solubles, fermentation solubles, whey products, egg yolk, forage juice, alfalfa meal and special fermentation products.

Use of Antibiotic

The continuous use of antibiotics at low levels in starting feeds for chickens and turkeys and at higher levels during periods of stress has been important. The question often is asked, "Will microorganisms be developed which are resistant to low level feeding of antibiotics?" Actually, no evidence has appeared which would indicate that this is happening in the poultry field. Libby and Schaible (Michigan State College) reported this year that continued feeding of antibiotics and arsenicals during a four year period resulted in less improvement from the addition of the drug with each successive year. However, the growth of control chicks which did not receive an antibiotic or arsenical grew more rapidly with each successive year. The authors do not interpret this to indicate that organisms in these quarters had become resistant to the drugs but rather that the "germ-load" or "disease potential" in the environment had steadily been reduced because of their continued use; thereby leaving fewer undesirable bacteria upon which the antibiotic could act. The exact mode of action is still not known concerning the manner in which antibiotics and arsenicals function, but the evidence suggests that their action in promoting growth is restricted primarily to their effect on microorganisms in the intestinal tract.

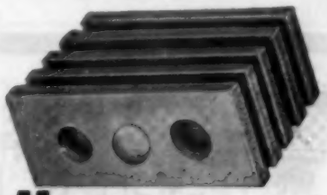
Now I have something which is a bit unusual. Following the 1955 Maryland junior broiler production project, 100 lb. each of several of the commercial feeds most commonly used in this project were obtained by the poultry department through the cooperation with the Maryland Inspection and Regulatory Service. Of these, 18 were broiler starting feeds. Analyses for crude protein, crude fat, and crude fiber were conducted by Maryland Inspection and Regulatory Service. Each of these feeds was fed to 20 male vantress red crossbred chicks (two trials) during a four week chick battery test. The combined results of these trials are presented in Table 3. The feeds are ranked according to decreasing productive efficiency, which amounts to the average weight divided by the feed required per unit of gain during the four week period. The differences in performance of the various commercial broiler starting feeds is striking. It is indeed interesting to note that the Maryland experimental high efficiency ration which was included in this not only gave better feed efficiency but also supported approximately 15% better growth than was obtained with the best commercial formulas. There can be no question but that many practical feeds can be greatly improved.

Correlation Not Good

When one looks at the guaranteed and actual analyses for protein, fat and fiber, it appears that there is no good correlation between the actual analysis and the level found. If one compares the actual crude fiber level with the productive efficiency of the feeds, there is the striking inverse relationship. On the other hand, if one compares the guaranteed analyses for crude fiber with the productive efficiency, the relationship is hardly apparent. This same lack of relationship with performance applies to the protein and fat guarantees. This merely illustrates the impossibility of estimating the relative value of feeds with only the information on the label.

There is no doubt, that feed manufacturers generally are conscientiously endeavoring to make the best possible feeds but in some cases at least, they can use additional information and help in formulation of rations. Obviously, this is a big challenge to college nutritionists, and it would seem to me that the feed control official might be able to aid the college nutritionist in reaching more of these manufacturers who can use additional help. If the feed control official in cooperation with the college nutritionist could supply each company desirous of registrating a feed with information concerning the most appropriate nutrient levels for use in feeds designated for various

EARLY METHODS for grinding grain were slow, arduous jobs, often powered by human energy. An ingenious device was this foot-driven pestle which pounded whole grains to bits in a stone mortar. The end result was crude and uneven with hull and chaff mashed in with the meal.



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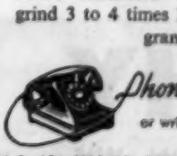

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purposes, this would be of extreme value to the feed manufacturer. The feed control official might even request the manufacturer to submit the calculated approximate levels of various critical nutrients in each of his formulas. This would aid the control official and would encourage all feed manufacturers to consider the levels of all critical nutrients in the formulation of their rations. Such a procedure could aid materially in improving the quality of commercially mixed feeds.

Feed Production School Planned in Washington

SEATTLE, WASH.—The Washington State Feed Assn. plans to sponsor a feed mill production school in conjunction with its 29th annual convention Feb. 17 at the Chinook Hotel in Yakima, Wash.

Recognizing the production problems of large and small feed mill operators, the association has scheduled 4½ hours for this phase of the convention. A follow-up school of two or three days duration will be devoted exclusively to feed mill production in January, 1957.

In addition to the production school, there will be two more schools on convention day—(1) retail merchandising of garden supplies and power equipment and cost of doing business, and (2) farmer-feeder financing and credit controls.

John Heimovics, executive vice president of the J. B. Ehrsam & Sons Manufacturing Co. of Enterprise, Kansas, met with the association committee in Seattle Oct. 25 to prepare an agenda for the production school. The association production school committee is made up of Robert Adelman, chairman; Chester Burdie, Mel Erickson, Otto Hill, Robert Murphy, Ray Whitcomb and John G. Wilson.

Nutrition Research Work Reported at Radioactivity Meeting

BOSTON — The value of radiosulfur in studies on ruminant nutrition and problems involved in establishing the biological equivalence of methionine hydroxy analogue were subjects of two papers presented at Traceriab, Inc.'s second Symposium on Applications of Radioactivity in the Food and Food Processing Industries. The three-day symposium was held recently at the Sheraton Plaza Hotel.

The report on ruminant nutrition studies using radiosulfur was given by Richard J. Block, director of The Bordon Co.'s biochemical research laboratories, Yonkers, N.Y. On the basis of these experiments, he said, it is now known that ruminants are able to utilize inorganic sulfur. Also, he said, where urea nitrogen accounts for a considerable proportion of the total nitrogen, the inclusion of inorganic sulfur affords a precautionary measure to assure the complete utilization of urea nitrogen for protein.

Availability of radiosulfur, S^{35}, eliminated the need for experimental procedures requiring a considerable length of time, he said. He described the technical approach as much easier, providing definite proof that radiosulfur fed as $Na_2S^{35}O_4$ is converted to cystine and methionine by the rumen organisms and, therefore, into the cystine and methionine of the animal's tissue proteins.

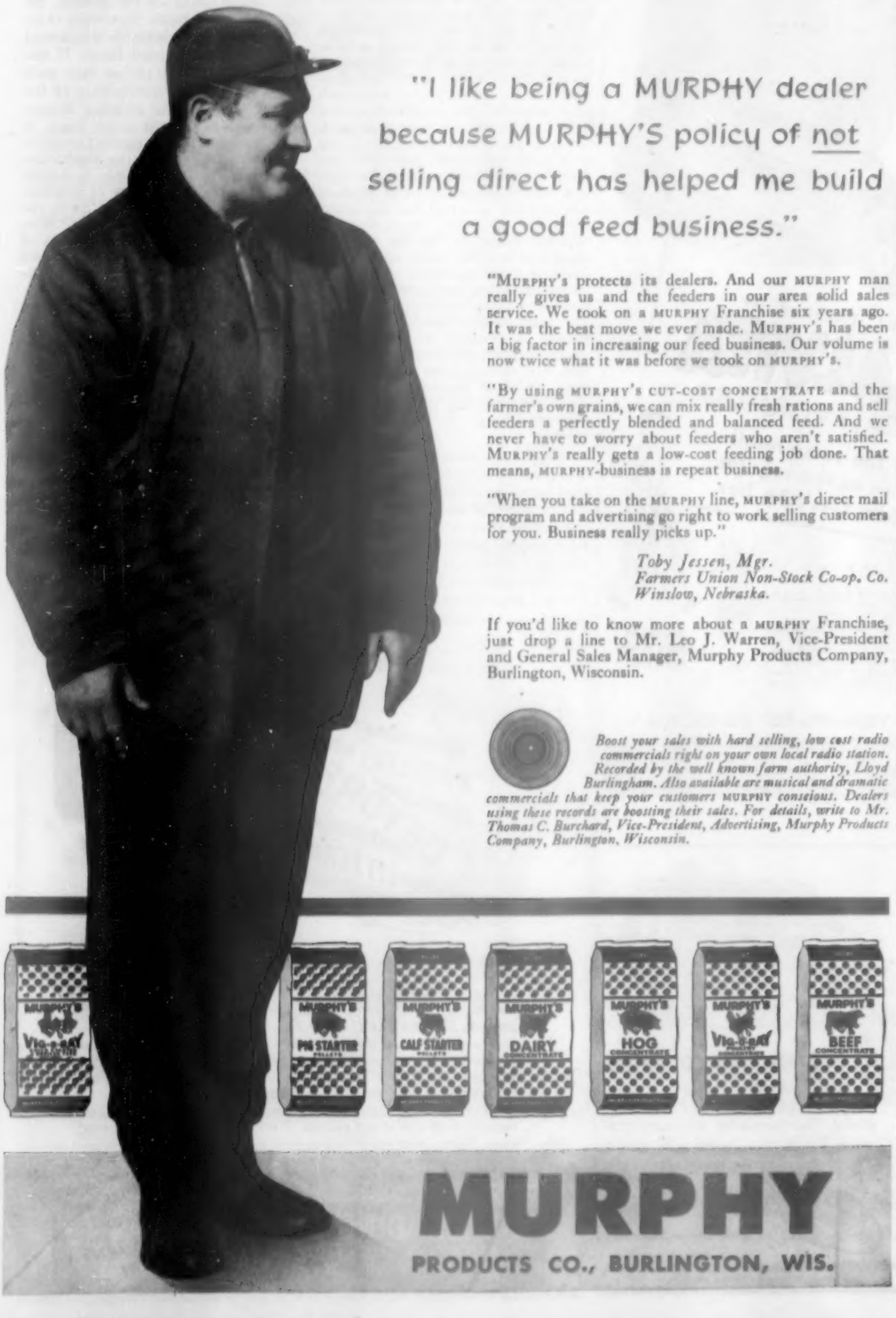
Monsanto's use of radioactive tracers to determine nature and basis of the equivalence of MHA (registered trademark for calcium DL-2-hydroxy-4-methylthiobutyrate) to methionine in order to establish MHA commercially as a supplement for practical broiler rations was described by Richard S. Gordon, Monsanto Chemical Co., St. Louis.

Differences between methionine and MHA found by non-tracer methods were small, yet large enough to be significant at 95% confidence limits, with exception of renal thresholds which were in the order of 15%, he said. The main technical problems were said to concern evaluation of differences obtained as result of several successive operations involving tissue workup and separation of active compounds.

Mr. Gordon said results of the tracer work were found to be more reliable and tended to support previous experimental findings that, on a molar basis, DL-MHA and L-methionine have somewhat greater ability to satisfy the sulfur requirement of chickens than does DL-methionine.

James R. Hoffman

ASSISTANT—Murphy Products Co., Burlington, Wis., has announced the addition of a research assistant to its quality control laboratory staff. James R. Hoffman has been named to this research post. He is a graduate of the University of Wisconsin's college of agriculture with a bachelor of science degree in livestock feed industry and commerce. He and his family will live in Burlington.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Pfizer Chemical Sales Makes 3 Changes

BROOKLYN—Three major personnel changes in the headquarters staff and an addition to the field sales staff of Chas. Pfizer & Co., Inc., Chemical Sales Division became effective Nov. 1.

H. Chandler Smith, eastern regional manager for the past three years, has been assigned to the division's headquarters staff as assistant to Paul E. Weber, assistant sales manager. Mr. Smith joined Pfizer in 1936 as a sales representative for the division covering the Philadelphia, Baltimore and West Virginia areas. From 1951 until 1953 he was field sales manager for the eastern region.

John E. McVeigh succeeds Mr. Smith as eastern regional manager. Upon joining the company in 1950, Mr. McVeigh served as a field sales representative, subsequently moving on to headquarters as administrative assistant to the division's general manager. He was named manager of the Food & Beverage Department in May, 1953.

Succeeding Mr. McVeigh as manager, Food & Beverage Department, is Jack D. Langlois, who has held the position of assistant manager in the division's medicinal chemical department since June, 1952. A chemical engineering graduate of Rensselaer Polytechnic Institute, Mr. Langlois joined the company in 1949 as a field sales representative.

Robert D. Campbell joins the division's mid-western region as a sales representative. Mr. Campbell was graduated from Franklin & Marshall College in 1953.

Northeastern Poultry Cooperative to Meet

TRENTON, N.J.—The third annual membership meeting of the Northeastern Poultry Cooperative Assn. will be held Dec. 2, at the Hotel Statler, New York, it has been announced by Clayton H. Stains, Flemington, N.J., chairman of Northeastern's executive committee.

Northeastern, with members in nine eastern states, recently passed two resolutions aimed at improving egg marketing conditions in the East. The first, addressed to the Northeastern Poultry Producers Council, urged that NEPPCO work for the adoption of a plan whereby prices paid to egg producers would be based on an average of market quotations for several days rather than on a single day's quotation. The second resolution favored a limitation of egg price fluctuation on the Mercantile Exchange to 2¢ up or down from the starting price on any trading day.

Northeastern recently issued dividend checks to holders of its preferred stock, the third such dividend declared since the organization was established in May, 1953. The 5% interest dividend was received by 152 stockholders, and amounted to a total of $3,286.

NEW LOCATION

OGDEN, UTAH—The Rasmussen Grain Co. has moved into larger quarters at 333 23rd St., Ogden, Utah. The new facilities provide greatly enlarged parking space.

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Californian Named to Aid USDA Secretary

WASHINGTON — Ezra Taft Benson, secretary of agriculture, this week announced appointment of Jack Z. Anderson of San Juan Bautista, Cal., as special assistant to the secretary. Mr. Anderson succeeds Wesley A. D'Ewart, now assistant secretary of interior.

Mr. Anderson is currently farming 175 acres of pears at San Juan Bautista with a brother and sister. The Anderson family have been actively engaged in fruit farming in California for three generations, beginning in 1865. He became manager of the farm in 1925 upon the death of his father.

Mr. Anderson remained active in fruit farming until 1938 when he was elected to Congress, serving there until he retired from office in 1952. He was born in Oakland, Cal., March 22, 1904.

With his agricultural and congressional background, Mr. Anderson will serve as liaison between Congress and the U.S. Department of Agriculture, carrying USDA's viewpoints to Congress and providing the department with congressional viewpoints on policy and other developments in agriculture. He will begin his new duties about Dec. 1.

PENB Develops Plans For January Egg Month

CHICAGO — Egg Month — biggest of all Poultry & Egg National Board promotions — will be celebrated in January for the fourth consecutive year.

Plans for January Egg Month include full participation of state January Egg Month committees, Dr. James M. Gwin, PENB general manager, points out. PENB will prepare newspaper, radio, TV and other publicity material for these committees. In addition, PENB will make many direct mailings to thousands of publicity sources.

All industry organizations, retail food associations, government services, restaurants, hotels and transportation services are invited to participate.

NEW OWNERS

ZUMBROTA, MINN.—The elevator formerly owned by General Mills, Inc., here has been purchased by Russell Steele and Harold Gethmann.

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Antibiotics in Turkey Nutrition

By Dr. H. L. Wilcke

Ralston Purina Co.

EDITOR'S NOTE: A review of present knowledge on the use of antibiotics in turkey nutrition was presented by Dr. H. L. Wilcke, Ralston Purina Co., at a recent conference of scientists held at the research facilities of Chas. Pfizer & Co. in Terre Haute, Ind. He pointed out that researchers have found that antibiotics are best fed throughout the growing period of a turkey and cited many of the benefits accruing from the feeding of antibiotics at low levels. The accompanying article is the text of his talk at the conference on antibiotics.

v v

A considerable amount of research work had been done with animal protein factor materials derived from fermentation by-products of the antibiotic industries, so the feed industry was ready to apply the results rapidly after the report of Stokstad and Jukes in 1950 that there was a growth response in poultry when crystalline Aureomycin was fed. McGinnis and co-workers and Singsen and Matterson had reported improvement in rate of growth for poults with animal protein factor supplements in 1949. They used a by-product from streptomyces aureofaciens fermentations.

Much of the earlier work had been done with a corn soybean oil meal type ration, but growth responses were obtained both with this type of ration and those using animal protein supplements such as meat scraps and fish meal. There was also a response over and above that obtained by the use of fish solubles in the turkey ration. Although it had been demonstrated that the antibiotics would produce a growth stimulation when fed to young turkeys, there were many questions which remained unanswered but which were of practical importance to the feed industry before that industry could take advantage of this new discovery. The questions which faced each manufacturer were:

1. Which antibiotic shall I use?
2. At what level must this antibiotic be used to produce the maximum economical growth response?
3. Should the antibiotic be fed throughout the growing period, or would it produce its maximum effect during the early growing stages?
4. Does the continuous feeding of antibiotics at low levels produce any harmful effects?

The feed manufacturer makes use of all sources of information to find the answers to these questions. Some of the answers are obtained in the research laboratories and farms of the feed manufacturer, in those of producers and suppliers of antibiotics, in the information from the experimental stations, either state or federal, or from any other source available.

Experimental Data

Data on the effect produced by varying levels of procaine penicillin in market turkeys which were fed from day-old to 26 weeks of age were obtained with market turkeys at Purina's research farm in 1950. Kramke and Fritz in 1951 published information which demonstrated that

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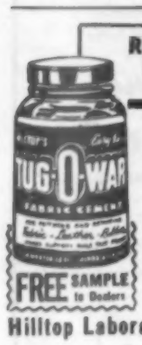

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Aureomcyin, bactracin, penicillin and Terramycin were all about equally effective in stimulating the rate of growth of turkeys when fed at the 10 gram per ton level. At 5 grams per ton, penicillin produced superior results, and Streptomycin did not produce the growth stimulation demonstrated by the other antibiotics used in this test.

Practical starting rations were used in this work. The antibiotics did stimulate growth on all of the rations tried, but the largest percentage gains in rate of growth were obtained when vegetable protein rations were used. The maximum percentage gains were obtained at about four weeks of age.

Almquist and Merritt, 1951, using crystalline Aureomycin at 25 milligrams per kilo of diet, produced 20 to 24% increases in rate of growth for young turkey toms to four weeks of age, and 21 to 27% increase in rate of growth of the young hens.

Halbrook and Beeckler, 1951, showed a 14% increase in growth of turkey poults to 12 weeks of age when they used Aureomycin at the rate of 180 grams per ton.

Many reports appeared in the literature regarding rate of growth stimulation made possible by antibiotics, with wide ranges in results. Growth stimulation of anywhere from 10 to 40% was reported. Naturally, the type of basal diet used influenced these results. It was demonstrated, however, that the turkey responded to the growth stimulation of antibiotics much more spectacularly than did the chicken. Growth responses of 20 to 25% over good rations were not uncommon with turkey poults ranging in age from 8 to 12 weeks. This is in contrast to the usual 10 to 15% growth stimulation in young chicks as reported by Heuser (1951), or the 5 to 8% found in Purina laboratories.

Length of Feeding Time

While there had been speculation as to whether it might be necessary to feed the antibiotics during the entire growing period for turkeys, Atkinson and associates published data in 1954 which demonstrated that it is desirable to continue the antibiotic feeding throughout the growing period. They found that removal of the antibiotic during the growing period significantly increased the variability of the flock. Terramycin at 2:25, 4.5 and 9.0 grams per ton, and Aureomycin at 4.5 grams per ton, increased growth rate of poults to eight weeks by 3 to 15% in the various lots. These results were obtained either with or without animal protein supplements in the rations. There was no effect on feed efficiency or livability of the poults. They concluded that antibiotics should be fed throughout the growing period.

Harper and Babcock (1953), using procaine penicillin at a level of 4 grams per ton, found that mortality was reduced very materially in poults which were not fed until 48 hours after hatching, and also to a lesser extent in those which were fed immediately after hatching. There was an increase in weight in each case where the penicillin was used in the feed. Their recommendation following this work was that penicillin or other antibiotics might be used to decrease mortality from non-specific causes in young poults.

There have also been investigations regarding the effect of the antibiotics on requirements for other nutrients. Slinger and associates in 1954 found that the use of penicillin or Terramycin reduced the requirement of the poult for biotin. Penicillin also reduced the poult's requirement for calcium pantothenate. They felt that there was a sparing effect on biotin and pantothenic acid requirements. Lindblad and associates found that calcium and phosphorus requirements for the turkey poult were not altered significantly by the inclusion of the antibiotics in the ration.

Why No Stimulation

During recent years, some laboratories have reported the experience of obtaining no growth stimulation through the use of antibiotics. This may very probably be explained on the basis of the work by Coates, by Bird and associates, and others, showing that they did not obtain marked growth stimulation when antibiotics were fed to chicks in new or clean environments.

This was also reported by Luckey and others in their work in germfree environments at the Lobund Institute. Therefore, it is possible that the continuous use of antibiotics under laboratory conditions for turkey poults may result in failure to obtain response. This has been the experience in Purina's laboratories, but there has been no evidence of such effects under practical feeding conditions where there is no opportunity for so-called "clean" environment to develop. A recent article by Libby and Schaible at Michigan State offers an explanation of these results in that they were able to show growth response when contamination was introduced into the feedstuffs.

The use of antibiotics at low levels has enabled the feed industry to provide better results for the turkey grower. First, there is the possibility of improving viability of poults by the use of antibiotics in the early feed. Second, growth stimulation of 15 to 25% may be obtained by the use of proper antibiotics in the turkey growing ration when used throughout the growing period. Third, antibiotics may be used to help control

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disease. This is a phase that I have purposely not included in this discussion because I feel that it belongs in the field of disease. Fourth, while it has been demonstrated that antibiotics may fail to produce growth response in laboratories, it has also been demonstrated that the controls have improved their rate of growth to the level of that produced by the antibiotic fed turkeys rather than a slower rate of growth with the antibiotic fed birds. Finally, no detrimental effects in regard to the use of antibiotics at high levels to control disease have been noted because of the feeding of low levels on a continuous basis to the turkey poults.

References

Almquist, H. J., and Merritt, J. B.—Effects of Vitamin B_{12} and Crystalline Aureomycin on Growth of Poults; Poultry Science, 30:312-314 (March), 1951.

Atkinson, J. C., et al—Antibiotics in Turkey Rations; Poultry Science, 33(2):333 (1954).

Coates, M. E.—The Mode of Action of Antibiotics; World's Poultry Science Journal, 9(1):14-16 (January-March, 1953).

Halbrook, E. R., and Beeckler, A. F.—The Value of a Vitamin B_{12}-Antibiotic Supplement When Added to Poultry Mash Mixtures Containing an Animal Protein Concentrate; Proc. 40th Poultry Sci. Assn., 1951, page 916.

Harper, J. A., and Babcock, W. E.—Effect of Penicillin on Early Mortality of Poults; Poultry Science, 32(1):179 (1953).

Kramke, E. H., and Fritz, J. C.—The Response of Chicks and Poults to Low Levels of Antibiotics; Proc. 40th Poultry Sci. Assn., 1951, page 921.

Libby, D. A., and Schaible, P. J.—Observations on Growth Responses to Antibiotics and Arsenic Acids in Poultry Feeds; Science, 121 (3151):743-735 (May 20, 1955).

Lillie, Robert J., Sizemore, J. R., and Bird, H. R.—Environment and Stimulation of Growth of Chicks by Antibiotics; Poultry Science, 32:468-476 (1953).

Lindblad, G. S., Slinger, S. J., and Motzok, I.—Effect of Aureomycin on the Calcium and Phosphorus Requirements of Chicks and Poults; Poultry Science, 33:482-491 (May), 1954.

Luckey, T. D.—Effect of Feeding Antibiotics Upon the Growth Rate of Germ-Free Birds; Report presented at Lobund Institute Colloquium, June 4, 1953 (unpublished).

MacGregor, H. I., Blakely, R. M., and Anderson, R. W.—Antibiotics in the Diet of Turkey Poults of Various Ages; Poultry Science, 33:36-38 (January), 1954.

McGinnis, James, et al — Response of Chicks and Turkey Poults to Vitamin B_{12} Supplements Produced by Fermentation With Different Organisms; paper presented at Am. Chem. Soc. Mtg., 1949.

Singsen, E. P., and Matterson, L. D.—Effects of the Animal Protein Factor on the Growth of Turkeys and Chickens; Report presented at New England Feedmen's Mtg., 1949.

Slinger, S. J., et al—Effect of Penicillin on the Niacin Requirement of Turkeys and a Carry-over Effect of Penicillin From Dams to Progeny; Poultry Science, 33:754-762 (September), 1953.

Slinger, S. J., et al—High Levels of Antibiotics and White Feathers in Poults; Poultry Science, 33:211-212 (January), 1954.

Slinger, S. J., and Pepper, W. F.—The Effect of Antibiotics on the Turkey Poults' Need for Supplementary and Pantothenic Acid; Poultry Science, 33:633-637 (May), 1954.

Stokstad, E. L. R., and Jukes, T. H.—Growth-Promoting Effect of Aureomycin on Turkey Poults; Poultry Science, 29:4, 611-613 (July), 1950.

White-Stevens, R., and Stokstad, E. L. R.—Relation of Chlortetracycline to Brooding Efficiency in Beltsville White Turkey Poult Production; Proc. 43rd Poultry Sci. Assn., 1954, page 49.

Williams, O. M., and Hill, J. E.—The Effect of Antibiotics on the Growth of Two Varieties of Turkey Poults; Poultry Science, 31:769-772 (1952).

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MISSOURI CONFERENCE—Feeding management was the topic of a series of discussions on the final day of the recent Missouri Feed Conference at the University of Missouri, Columbia. Panel members included L. F. Tribble, J. E. Comfort and Paul R. Cornelison of the Missouri School of Agriculture staff. Shown above, left to right are Mr. Tribble; Dwight Dannen, Dannen Mills, Inc., St. Joseph, panel moderator; Prof. Comfort; Prof. Cornelison, and J. W. Burch, director of the Missouri Extension Service. A panel member not shown above was Q. B. Kinder of the Missouri staff.

300 Broiler Growers Attend Yieldmor Clinic

PIQUA, OHIO — More than 300 broiler growers from the eastern part of the U.S. attended the first annual Broiler Management & Disease Control Clinic, held here Oct. 20, sponsored by Yieldmor Feeds, Inc., Piqua.

Participating in the program were recognized authorities on the general theme of the meeting. Included among the speakers and panel members were: Prof. William Aho, extension department, University of Connecticut; Dr. C. A. Bottorff, veterinary clinical research division, (Lederle) American Cyanamid Co.; Prof. R. E. Cray, department of poultry science, Ohio State University; Dr. Roger Donnelson, Yieldmor Laboratory Service, Piqua; Dr. R. L. Knudson, veterinary in charge, animal diseases, Eradication Branch, U.S. Department of Agriculture for Ohio; Dr. Hugh Lightbody, Dr. Salisbury's Laboratories, Charles City, Iowa; Dr. Glyde Marsh, poultry extension service and college of veterinary medicine, Ohio State University; W. S. Thompson, Ohio feed control official; Prof. G. S. Vickers, Ohio Poultry Improvement Assn., Ohio State University.

Growers at the meeting represented a capacity of more than 3 million broilers.

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Reviewed here are research reports dealing with protein and fiber evaluation of malt sprouts, and high salt intakes for steers and wethers. The reports appeared in a recent issue of the Journal of Animal Science (Vol. 14).

High Salt Intakes for Steers and Wethers

In many instances, salt is offered free choice as loose salt or block salt to livestock, and salt is usually one of the principal components of mineral mixtures that are also offered free choice. There is a tendency among some stockmen to use a feed supplement containing a prescribed amount of salt as well as other minerals. A disadvantage of the free choice method of feeding salt or mineral, for that matter, is said to be that some animals may consume considerable amounts or far more than companion animals in the same feed-lot, or on the range. The idea of mixing the salt in with a feed supplement or the complete grain concentrate is to limit, or in a way to equalize the salt intake of all animals.

In a study at the Oklahoma Agricultural Experiment Station, A. B. Nelson and associates have attempted to determine the influence of high salt intake on nutrient digestibility and nitrogen retention of steers and wethers. Sodium and chloride balances were also included in the investigation.

Grade Hereford steers weighing approximately 500 lb. were fed a basal and a high salt (6% salt) ration in two balance trials. The basal ration consisted of approximately 7 lb. of prairie hay, 1.5 lb. cottonseed meal, 1 oz. of gelatin and ⅛ oz. of salt. For the high salt ration, approximately 8.4 oz. of additional salt was given each steer daily in gelatin capsules. Actually, the additional salt (approx. 8.4 oz.) was divided into half with each capsule (4.2 oz.) given twice daily at the regular feeding time. The capsule was resorted to because the steers would not consume that much free salt in the ration when confined in their metabolism stalls.

Wether lambs weighing approximately 65 lb. were used in two balance trials. The basal ration consisted of about ⅔ lb. of prairie hay; ⅓ lb. ground yellow corn; ⅛ oz. gelatin; 1/9 oz. calcium carbonate; and less than ¼ oz. (8 gm.) of salt. The high salt ration contained an addition of approximately 1.5 oz. of salt.

The high salt intake (in excess of 6%) did not significantly influence the digestibility of components of the rations fed to the steers. It did decrease the digestibility of organic matter and nitrogen-free extract by the wethers. There was a slight decrease in nitrogen retention by the steers and wethers but this was not significant. Feeding the high level of salt resulted in a significant increase in the retention of sodium and chloride. However, some 90% of the ingested sodium and 98% of the chlorides were excreted in the urine, which meant that very little of these elements were retained in either instance—low or high salt intakes.

From these studies it does not seem to adversely affect steers to receive a high intake of salt in their

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ration. The same should be true for excess salt fed free choice. However, wethers may not utilize their feed to as good advantage when permitted or forced to eat salt in excess of their daily requirements.

As far as mineral mixtures are concerned, most animals seem to consume free choice about what they need as to salt and other mineral compounds or elements unless the mineral mixture is highly flavored. Some flavored mineral mixtures have been found to be too palatable with the result that too many animals consume minerals at the expense of energy protein and vitamins or the essential non-mineral nutrients of their rations. The same is true if a great excess of minerals is incorporated into complete feeds and it can happen with excess minerals in concentrates or balancers.

●

Protein and Fiber Evaluation Of Malt Sprouts

Crampton and associates of Macdonald College (McGill University), Canada, have shown that malt sprouts, in spite of their high content of crude fiber, stimulate growth and increase feed consumption of pigs. Since these favorable effects were not found to be due to any antibiotical activity of malt sprouts, it was decided to determine the biological value of its protein and to explore the digestibility of its fiber.

Three separate metabolism trials were conducted using Yorkshire barrows which averaged 90 lb. at the beginning of the experiment. Within each trial the rations were rotated to each pig. The basal ration was ground yellow corn. In the first trial, malt sprouts were added at levels of 12, 24, and 36%. In the second trial, linseed oil meal was used in amounts to supply crude protein at similar levels as contributed by each addition of malt sprouts. The same was done with wheat bran in the third trial.

The apparent digestibility of the linseed protein was 82% as compared to 65% for the protein of malt sprouts. When 45% or more of the total protein of the ration was supplied by malt sprouts or linseed, the linseed oil meal replacement of malt sprouts was 84%.

The apparent digestibility of the crude fiber of malt sprouts was only 8% as compared to 20% of that of wheat bran. It was concluded that the growth-stimulating property of malt sprouts for pigs cannot on the basis of these experiments be attributed to either a superior biological value of its protein or to a high digestibility of its crude fiber.

It wouldn't be too much of a surprise to find that malt sprouts contribute to pig rations some known or unidentified growth factor(s). Undoubtedly that probability is already under study by these investigators.

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Success Reported With Restricted Turkey Ration

CROOKSTON, MINN.—It is probable that turkeys can be fed to healthy market weight with less protein in the latter part of their growth period. This was reported recently at the University of Minnesota's Northwest School and Experiment Station here.

A. M. Pilkey, station poultryman, speaking at the station's annual Turkey Day, said that a group of 100 turkeys, fed a 34% protein ration on a restricted basis—that is, allowing only 15 lb. of mash per 100 birds per day with free choice corn and oats—developed market-weight turkeys at a feed cost of 10½¢ lb., more than 1¢ lb. below four other unrestricted feeding plans.

The restricted ration produced turkeys at a feed cost of $2.19 per bird—lowest of all five groups—and gave up to 24¢ more profit per bird over feed cost than the four other plans. The 34% protein, restricted-fed group also had a lower feed requirement per pound of gain than the other groups—taking 3¼ lb. of feed to gain 1 lb., in comparison to about 3⅓ lb. of feed needed by birds on the other rations.

Here's what the groups got: Lot 1 was fed all they wanted of the Minnesota standard 25% protein ration; Lots 2 and 3 got a 28% protein ration and were fed all they wanted; Lot 4 got 34% protein ration and were fed all they wanted, and Lot 5 got the 34% protein ration, with mash restricted to 15 lb. per 100 birds per day, but full-fed corn and oats.

The 34% protein ration cost $80 a ton. This is about $4 a ton more than the 28% protein ration cost and about $7 more than the 25% protein ration.

NEW FEED MILL OPERATOR

PINE RIVER, WIS.—Ray Rogers is the new operator of the feed mill here.

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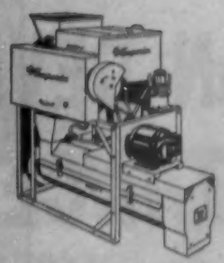

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Feed Service Bulletin Board

Helpful Notes on Feeding and Management for Feed Men and Their Customers

Orderly Marketing of Hogs

A more even distribution in the numbers of hogs going to market daily would avoid seasonal surpluses and shortages that occur under present conditions, says R. M. Godsey, swine specialist at Virginia Polytechnic Institute. A steady flow of hogs to market is needed to provide more stable prices for farmers and permit more efficient use of labor by the packer.

Mr. Godsey urges farmers to "top out" their market hogs by selling each week the hogs that have reached 200 lb. in weight. This will help to avoid heavy, market-breaking runs, and will reduce the extra lard problem that comes with the heavyweight market hog. The live, handyweight market hog is a perishable product, just as is the pork he yields, and both farmer and processor must sell the product at its best.

Mr. Godsey says that a steady supply of hogs for the market throughout the year is the goal in recommending that farmers develop a multiple farrowing program of hog production.

Many farmers will find it convenient to farrow two groups of sows twice a year, with farrowing dates set 90 days apart. The biggest single advantage to this system would be more orderly selling of hogs with less of the seasonal price fluctuation commonly due to extremely heavy market runs. This practice, he says, would level the sow market also, as sow supplies now vary from as much as 50% to as little as 5% of the total receipts, according to the season.

Multiple farrowing will have production advantages in addition to the removal of market price risks. Smaller groups of sows farrowing at intervals will make more efficient use of farrowing and feeding equipment, and produce market hogs more uniform in size. Time and labor needed to care for the hogs will also be distributed more evenly, concludes Mr. Godsey.

◆

Danger for Cows in Corn

From now until snow covers the ground there is danger for cattle in the cornfield or in second growth of sorghum or sudangrass, warns Dr. John Herrick, extension veterinarian at Iowa State College. He says every year many cattle die needlessly because farmers fail to realize the results of poor grazing and foraging practices.

The greatest amount of trouble occurs when cattle are turned into the cornfields after picking, Dr. Herrick says. They rapidly fill up on corn and develop impacted rumens, which are formed by a great mass of hard, dry material. This causes the animal severe distress due to rumen inactivation.

To prevent this, cattle should be

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well fed before being turned into the stalks, and then allowed to forage there for only a few hours each day until most of the dropped corn is eaten.

The greatest poisoning effect comes from prussic acid poisoning which occurs when frosted second growth of sudangrass or sorghum is pastured. This kills cattle quickly.

High death losses occurred last year in many drouth areas, Dr. Herrick points out, when cattle were turned into cornstalks which were first drouth stricken, then revived by fall rains. A nitrate poisoning developed when cattle fed on these stalks. To determine if this condition exists, Dr. Herrick suggests turning only a few cattle in the stalks in drouth-stricken fields at first and then observing them closely to see if the stalks are dangerous.

Ample water and salt should be provided when cattle are in the stalks. Only feeder cattle or dry cattle should be allowed to forage on stalks, Dr. Herrick points out. It's unprofitable to feed stalks to dairy cattle.

◆

Limited Feeding of Gilts

In its first year of testing, a method of limited-feeding gilts shows much promise. This was found in University of Minnesota animal husbandry department tests led by Dr. L. E. Hanson. In the tests, 20 pairs of gilts —mostly littermates—were used. One group was limited by replacing from 15 to 35% of the corn in the ration with an equal weight of corn cobs ground over a 5/32-in. screen.

At farrowing time, the normally fed gilts weighed an average of 422 lb., the limited-fed gilts, 318 lb. Up to farrowing time each gilt in the "normal-fed" lot had eaten 1,855 lb. of feed and each in the limited-fed group, 1,636 lb.

But, 1,165 lb. of the ration fed the limited-fed lot was the regular ration —the rest, 471 lb., was ground corn cobs.

Figuring the value of ground corn cobs at $15 a ton, feed costs look like this: Three-week old pigs from the limited-fed lot were produced at a cost of $3.08 apiece—that's $1.37, or 29¢, less than pigs from the normal fed sows, which cost $4.45 apiece, Dr. Hanson says.

And the reproductive record of the limited-fed gilts, except for the pigs' birth weights, was fully equal or superior to that of their full-fed sisters.

The limited-fed sows had only 1.5 in. of backfat and yielded nice-sized cuts at the packing house. But the dressing percentage was higher for the normal-fed group — 72%, compared to 66% for the limited-fed.

◆

Low Producers Are Liabilities

An empty stanchion is more profitable than a cow which produces less than 100 lb. of butterfat content a year, reports G. A. Williams, Purdue University extension dairyman.

Cow numbers in a dairy herd are not a guarantee of profit. Of the 19,100 cows tested in Indiana DHIA units last year, 191 produced less than 100 lb. of butterfat. These 191 cows lacked $53 of producing enough milk to pay for the feed consumed, Mr. Williams says.

Cows of this low production level cannot possibly make any profit for their owner, he continues. A retail price of between 30 and 40¢ a quart for milk to the consumer would have to be charged to meet all expenses required to put the products of these low producers on the market.

For the 33 years for which DHIA records are available, Mr. Williams says, cows producing less than 100 lb. of butterfat annually did not pay the feed bill 23 of these years. Low production barely kept incomes out of the red for the other 10 years. And, these figures do not include labor, housing, depreciation and other costs.

If a cow produces such meager production that cost of feed is not covered by $53, the total net loss is well over $100 each year—equivalent to paying a stall rental of $12 a month per cow, he states.

◆

Keep Turkeys from Droppings

Disease outbreaks can often be prevented, or at least will be less severe, if turkeys are fenced away from areas where their droppings accumulate, according to the researchers at the Ralston Purina Co.

This can easily be done by stretching woven wire on the sides and top of outside roosting frames. Where birds are in semi-confinement, Purina poultrymen have found that it helps to locate the roost and shelter building so it extends outside the rock-covered yards. This keeps a good portion of the droppings on the outside of the confinement yards.

NEW FEED STORE OPENS

DE SOTO, MO. — Occupancy of Westland Shopping Center was completed recently as John D. Williams and son, John, Jr., opened a feed supply store at the west end of the six-business center constructed by Harry FitzGibbons.

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This reader service department announces the development of new and improved products, new services and new literature offered by manufacturers and suppliers. Claims made in this department are those of the firm concerned. Use the accompanying coupon to obtain the desired information.

No. 5326—Feed Aroma Enhancer

A feed aroma enhancer for use in pig starter formulas during weaning period has been developed by Dodge & Olcott, Inc. The additive is called Odorama and is not a flavor but an aroma, the maker says. The product has been tested and proven effective in both mash and pellet form, according to Dodge & Olcott. It is held as an important factor in continued maximum feed utilization by the hog throughout the entire feeding period. Added cost to manufacturer is claimed as negligible. No change is required in regular feed formula, according to the maker. For a trial sample of mash type pig starter formula feed with Odorama, check No. 5326 on the coupon and drop it in the mail.

No. 5334—Corn Sheller

Special features of the new No. 20 corn sheller, a product of the Bryant Engineering Co., were announced recently. The sheller was designed and engineered to handle shelling requirements of 4-600 bu. of shelled corn per hour (machine picked corn), the unit is constructed of heavy gauge material and is welded throughout. It is equipped with a large fan to handle the cob and shucks. An air sweep for cleaning the shelled corn works like this: Air is drawn through the shelled corn, at the point of discharge, by means of an air duct running from the eye of the fan to the bottom of the shelled corn hopper. Thus the foreign material removed from the shelled corn is discharged with the cob and shucks. The sheller is so designed that a Coarse Crusher can be used ahead of it to protect the sheller proper from stones and other foreign materials. Secure more complete details by checking No. 5334 on the coupon and dropping it in the mail.

No. 5335—Premix

A new product which is a combination of stilbestrol and rumen bacteria has been introduced by Poul-An Laboratories, Inc. Called Ruf-Stil, the premix is available in 50-lb. drums for use in cattle fattener feeds. A use application has been granted by the Food and Drug Administration and supplemental applications are available for customers. The processor claims greater weight gains, better feed utilization (particularly on high roughage feeds), better disease resistance and that the product is useful when there is a change in cattle feeding habits such as bringing them from dry pasture to feed lots. For further information please check No. 5335 on the coupon and mail it to Feedstuffs.

No. 5333—Energy Values

"Energy Values of Feedstuffs for Poultry," a 23-page booklet, is offered by Limestone Products Corporation of America. The contents include a table showing original Fraps productive energy values of a number of feedstuffs. There are also tables which show recalculated Fraps values as well as tables giving the more modern and more useful metabolizable energy values. The booklet is a reprint of a new chapter from the 1955 edition of the book, "The Scientific Feeding of Chickens," by Dr. Harry W. Titus. To receive a free copy of the booklet check No. 5333 on the coupon and mail it to Feedstuffs.

No. 5327—Feed Mixer

The Fort Worth Steel & Machinery Co. has begun production of a vertical feed mixer in three sizes. The mixer is offered in sizes for 2,000, 3,000 and 4,000 lb. batch capacities. Company spokesmen said that feeds are thoroughly mixed by agitators inside the housing and that the mixing paddles keep the feeds constantly in motion to insure an entirely uniform mixture. A V-belt drive at the top operates the mixer, and the unit is designed so that the motor mount can be placed at any point about the circular housing—to meet individual installation needs. The mixer has two glass-covered peepholes and an inspection door which is readily removable whenever necessary for easier inside maintenance. A vent opening is in the top cover. The feed intake hopper is at floor level. Secure more complete details by checking No. 5327 on the coupon and mailing it to Feedstuffs.

No. 5331—Hanging Feeder

A new hanging feeder for all types of poultry and turkeys has been announced by the Rhinehart Manufacturing Co. The feeder has a collapsible plastic feed hopper (see photo). It folds to a thickness of 5 in. and weighs only 5 lb., offering much saving in shipping and packaging costs. The feeder pan is 17 in. in diameter. Capacity of the feeder is 70 lb. To secure more complete details check No. 5331 on the coupon and mail it to Feedstuffs.

No. 5332—Protein Balance Chart

Specifide, Inc., has available a new chart for calculating the protein balance with methionine in formulating broiler rations. The chart is called "Count Your Calories." Also available is an ingredient analysis table for calculating protein, methionine and productive energy. To secure the chart and the formula construction and analysis sheets, check No. 5332 on the coupon and mail it to Feedstuffs.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number on the coupon and forwarding it to Feedstuffs.

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- ☐ No. 5327—Feed Mixer
- ☐ No. 5331—Hanging Feeder
- ☐ No. 5332—Protein Balance Chart
- ☐ No. 5333—Energy Values
- ☐ No. 5334—Corn Sheller
- ☐ No. 5335—Premix

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No. 5324—Plastic 12-qt. container for calf product, National Vitamin Products Co.

No. 5798—Care and maintenance of concrete floors, National Sanitary Supply Assn.

No. 5308—Molasses mixer, Duplex Mill & Manufacturing Co.

No. 5309—Accounts receivable plan, Remington Rand.

No. 5310—Hammermill, Duplex Mill & Manufacturing Co.

No. 5311—Automatic seed treater, Panogen, Inc.

No. 5312—Chronic respiratory disease product, Dr. Salsbury's Laboratories.

No. 5313—Liquid vitamin A palmitate for adqueous dispersions, Chas. Pfizer & Co., Inc.

No. 5315—Bulk feed body, Helm Manufacturing Co.

No. 5316—Torula yeast for feeds, Red Star Yeast & Products Co.

No. 5317—Feed mixer, Wenger Mixer Mfg. Co.

No. 5320—Salt drum promotion, International Salt Co.

No. 5322—Calf creep feeder, Brower Manufacturing Co.

No. 5323—Grain and roughage storage unit, A. O. Smith Corp.

No. 5325—52-ft. tubular grain elevator, West Fargo Manufacturing Co.

No. 5328—Pressure sensitive tape for patching multiwall bags, Behr-Manning Division, Norton Co.

No. 5329—Folder on portable formula feed blender, Barnard & Leas Manufacturing Co.

No. 5330—Plastic base material to coat boxcars, J. W. Mortell Co.

FDA Authorizes Use of Rumen Organisms—Stilbestrol Premix

KANSAS CITY—A use application has been granted by the Food and Drug Administration to Poul-An Laboratories, Inc., Kansas City, for a formula feed premix made up of rumen organisms and stilbestrol, according to word received by the Kansas City concern.

Marketed under the trade name, Ruf-Stil, the product is subject to the same FDA restrictions in effect for feed manufacturers using other stilbestrol products. All feed manufacturers must file supplemental applications to the FDA for approval to add Ruf-Stil to their feed. These applications are being handled by Poul-An for their customers.

For about three years the Kansas City firm has manufactured and sold Rufis Concentrate for sheep and cattle feeding and Rufis Bio-Concentrate for feeding to calves. Each product contains natural rumen bacteria harvested from rumen material extracted from live animals.

Feed lot feeding tests are being conducted in various parts of the country to substantiate the effectiveness of Ruf-Stil as to better animal health, greater weight gains, better feed utilization and better carcass quality, Poul-An Laboratories indicated.

Grain Virus Disease Found in Kansas

MANHATTAN, KANSAS — Two strains of barley stripe mosaic, a virus disease that infects wheat, rye and several varieties of corn, have been found in Kansas.

Dr. W. H. Sill, Jr., and Dr. E. D. Hansing, Kansas State College scientists, found the virus disease in 18% of 623 plants studied and in fields throughout Kansas, particularly in the eastern half of the state. Although the K-State men did not estimate yield losses from the disease, others have estimated 30 to 90% losses.

Using inoculations from the diseased barley plants in greenhouse work, Drs. Sill and Hansing found that one of the strains of barley stripe mosaic infected oats, while the other strain did not. Both strains infected rye, wheat and corn.

The barley stripe mosaic causes wheat leaves to roll and wheat plants to stunt badly, much worse than they do with wheat streak mosaic. Neither of the two new strains of mosaic (also called barley false stripe) infected sorghums, alfalfa or soybeans.

Counties where the Kansas scientists found the disease include Reno, Cheyenne, McPherson, Morris, Dickinson, Clay, Osborne, Marion, Butler, Smith, Saline, Coffey, Sumner, Jefferson, Mahshall, Barton, Linn and Thomas.

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The Hydralift, when you receive it, is complete with truck cradle, cables, overhead hoisting equipment, rails and screws for the track, flexible hose, oil pump and motor. Installation diagrams and full instructions for installation, operation and maintenance are also supplied with the Hydralift. The overhead carriage channels are adjustable for exact driveway width, so the track supporting timbers can be anchored flush with the driveway walls.

One reason the Hydralift is easy and inexpensive to install is that the pump and motor are mounted as one unit and can be placed most anywhere: It can be overhead, on the floor, anywhere—just so the Hydralift carriage is visible to the operator. (If the power unit is placed overhead or somewhere out of reach of the operator, a simple cable and pulley system of remote control is used.) The only connection consists of flexible hose furnished with the Hydralift and standard piping, available everywhere, to carry the hydraulic fluid.

The power unit itself consists of the oil pump and electric motor (as illustrated). All operating control of the Hydralift is by means of the one lever seen mounted on the pump.

Hydralift and Dump Grate Used at Badgerland Coop., Whitewater, Wis.

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Mfg. Co.
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One Lever Mechanism Gives Operator Complete Control On Either Up or Down Movement

Field reports on the Strong-Scott Hydralift, introduced in 1954, indicate that elevator operators are finding this new overhead hydraulic hoist the most satisfactory ever produced. The simple one lever operating mechanism gives the operator positive control. Problems of creep and jerk, common with other types of hoists, have been eliminated. Because the Hydralift is built with a double acting cylinder, positive control can be maintained on both the up and down movement of the lift. The double hydraulic action prevents accidental dropping and allows for positive stop at any desired level.

Minimum Space Required

Because of its low headroom requirements (only 11 inches from track support timbers to roof) the Hydralift can be installed closer to the ceiling and gives lifts of greater height than other overhead hoists, as illustrated in the photo above. The Hydralift is designed so that no machinery projects above or below its frame. The motor, pump and controls can be placed wherever present electrical facilities are available or they can be mounted overhead out of the way by utilizing simple remote controls.

Motor and Oil Pump Used with Hydralift

Three Standard Sizes

The Hydralift comes in three standard sizes, 3 H.P. 5,000-lb. lift, 5 H.P. 7,500-lb. lift and 7½ H.P. 10,000-lb. lift. Each size is available for driveways from 10 to 16 feet wide and can be supplied on request for wider driveways.

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STARTER RATIONS

(Continued from page 59)

singly, the order of preference was lard, cane sugar, and tallow. In both experiments the pigs showed a marked early preference for the waste fat rations. However, as they grew older, they ate an ever increasing amount of the sugar rations.

Summary

In summary the following points seem pertinent.

1. The pre-starter ration must contain at least 24% of high quality protein, palatable and readily available sources of energy, essential vitamins and minerals, sources of unidentified factors, and high levels of antibiotics. However, there is much to be learned and work must continue to provide additional information on requirements and how these requirements can best be provided.

2. Mixed starter rations fed on good pasture need not be as critically formulated as the pre-starter ration. Seventeen percent protein (Illinois) appears to be adequate. If fed under drylot conditions, a slightly higher level would be recommended. Palatability is probably the most important single item to consider in building a creep ration for suckling pigs on pastures.

3. Oat groats, sugar, lard and beef tallow add to the palatability of starter rations.

4. Pigs prefer pelleted starter rations to rations in meal form.

5. Early weaning is a practice that should be restricted to the good hog man. The "so-so" feeder and manager is doomed to failure. It is a science, and the earlier the weaning, the greater the science.

6. The economics of early weaning is a somewhat controversial issue at the present time.

Stilbestrol Studies with Mink Reviewed by USDA Scientist

WASHINGTON—A recent talk on hormone feeding by Dr. T. C. Byerly of the U.S. Department of Agriculture included some data and comments on the question of the possible effects on mink reproduction of very small amounts of stilbestrol, such as might conceivably occur in unwashed tripe from stilbestrol-fed cattle.

The talk was given at the annual meeting of the Animal Nutrition Research Council. (A review of the meeting appeared in the Oct. 29 issue of Feedstuffs.)

Of great interest, Dr. Byerly said, are three independent projects conducted this year by a private breeder in Wisconsin, another at the University of Wisconsin and one at the U.S. Fur Animal Experiment Station at Cornell University.

Previous work, conducted cooperatively by R. M. Shackelford at the University of Wisconsin, had shown that daily dosages of 10 micrograms per female mink, or more, fed during breeding and gestation periods, would sharply reduce the number of live litters born.

The private Wisconsin work, the USDA-Cornell work and the University of Wisconsin work each included stilbestrol series at dosages below the 10 microgram level. In each case a dosage of 5 micrograms or less produced more, not less, kits per lot than the control. The USDA-Cornell work confirmed the destructiveness of the 10 microgram dosage.

"We may not conclude that very low dosages of stilbestrol improve mink reproduction," Dr. Byerly said, "but the results do warrant further research on this question.

"The University of Wisconsin, cooperatively with the Iowa Experiment Station, also examined directly the possible effects of unwashed tripe from steers fed stilbestrol in the permitted manner. They found no evidence of effect during the 1955 breeding season.

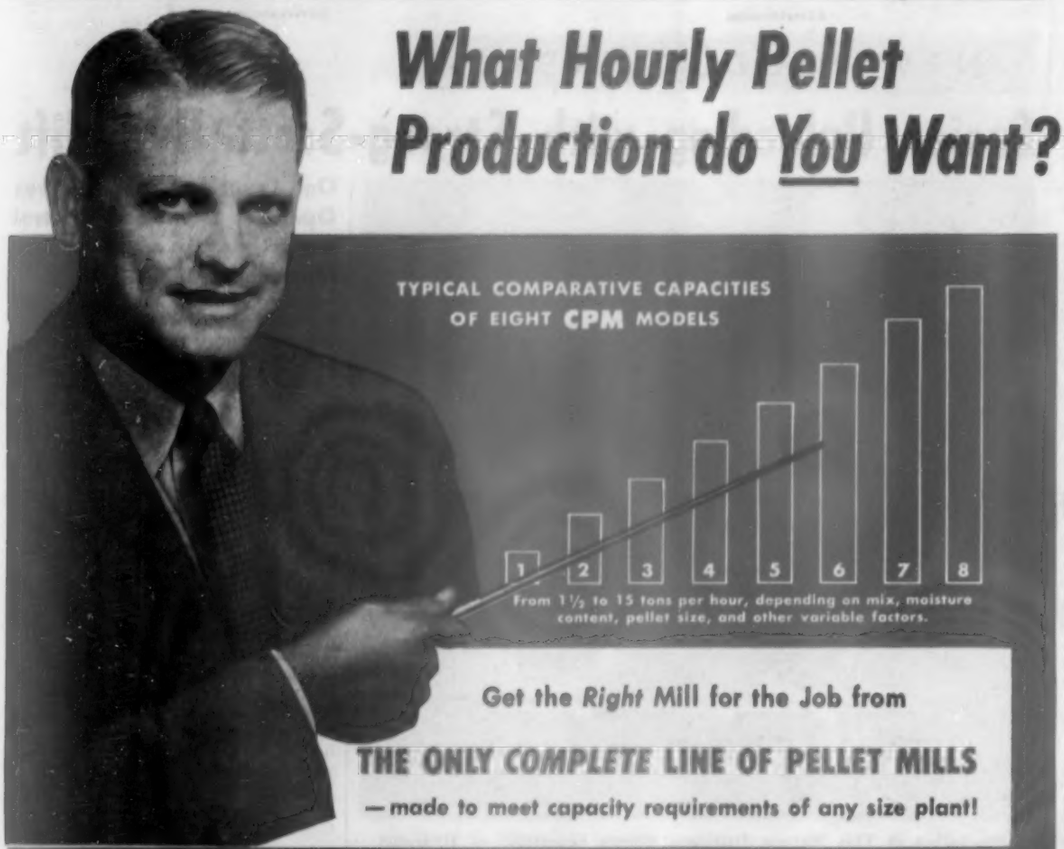
"Research is continuing at the University of Wisconsin and USDA-Cornell on the possible effects of very low stilbestrol dosages on growing mink."

South Carolina Hog Marketing Studied

CLEMSON, S.C.—"Hog Marketing Practices in South Carolina" is the title of Bulletin 425 now being distributed by the South Carolina Agricultural Experiment Station. It was prepared by Lewis D. Malphrus, associate economist for the station. Copies may be obtained from the Clemson Publications Department.

The bulletin contains data and conclusions based on a study to examine marketing practices of South Carolina farmers who sell hogs, in regard to marketing methods used and reasons for their use, sources and adequacy of market information used by farmers, and farmers' opinions concerning the adequacy of hog markets in respective areas.

In the study, information on hog marketing practices used by South Carolina hog producers was obtained from 235 farmers through mailed questionnaires. These questionnaires covered details as to marketing practices during 1951, and the data were later brought up to date through questionnaires covering practices through 1954.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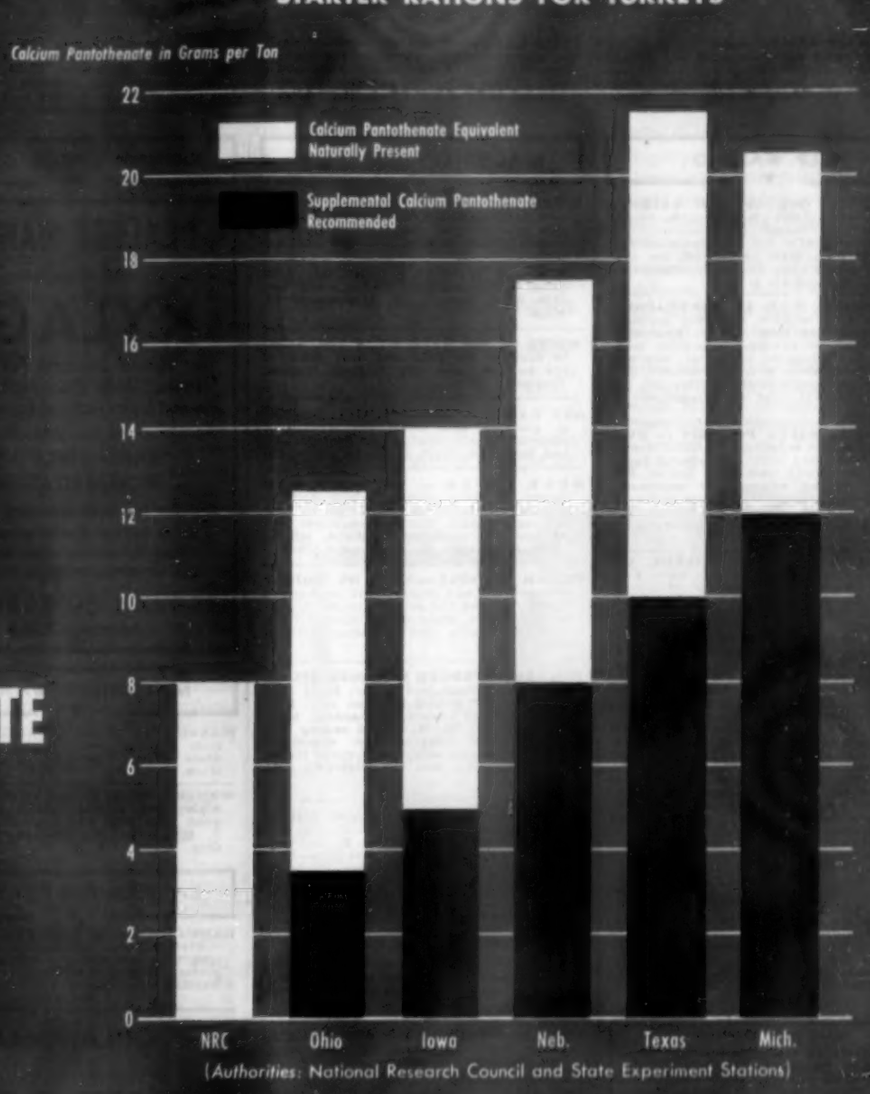

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TOP CALIBER SALES ENGINEER OR salesman with feed machinery background to represent nationally known manufacturer of feed milling equipment. Two territories open in southeast and south central sections of country for a line of equipment which is the leader in its field, backed by an expanding, reputable firm. Position permanent, with top remuneration for qualified man. Address 890, Feedstuffs, Minneapolis 1, Minn.

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BULK TRUCK — VAN BODY WITH Sprout, Waldron pneumatic bulk delivery attachment. Hauls 200 bags. Can be used for bags or bulk. R182 International 1954 in excellent condition. Sunrise Milling Corp., Somerville, N. J., Phone 5-1600.

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FOR SALE—GRAIN HANDLING EQUIPment from closed brewery in Easton, Pa.: (2) steel grain bins—4,400 cu. ft. each—13' dia. x 33' high. (6) steel grain bins—2,050 cu. ft. ea.—9' 6" dia. x 29' high. (3) bucket elevators, approx. 50' high, with 8" x 4" x 4" steel buckets on 12" centers on 9" wide canvas belt in 7" x 10" steel casing. Approx. 130' steel screw conveyor 9" and 12" dia. Perry Equipment Corp., 1403 N. 6th St., Philadelphia 22, Pa.

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OKLAHOMA

(Continued from page 15)

and efficient feeding programs, Dr. Ronning concluded.

Caged Layers

The nutritionist and feed manufacturer must realize that the "caged layer" obtains all nutrients from the feed and has no opportunity for outside foraging, Dr. J. R. Couch, Texas A&M College, said in his talk on "Feeding Caged Layers." This means that the mash must contain all nutrients in amounts to support high egg production, good shell quality and maximum feed efficiency.

Best results, Dr. Couch said, have been obtained with caged layers when the protein content of the feed was 17½ to 18%. It is quite true that this is slightly in excess of the recommendations of the poultry subcommittee of the National Research Council.

Dehydrated alfalfa meal is used at levels of 2½ to 5%, he said. The grain portion of the diet will be composed of ground yellow corn or a combination of corn and ground milo. The phosphorus level in the caged layer mash should be about 0.85%. The calcium level should be 2.25 to 2.50%. It is imperative that a half pound of manganese sulfate be added per ton of finished feed. It is recommended that an antibiotic and arsonic acid be added to caged layer feeds, Dr. Couch said.

Stilbestrol Feeding

Dr. Wise Burroughs, Iowa State College, discussed the stilbestrol cattle feeding experiments at various colleges.

Dr. Burroughs said cattle liveweight gains were stimulated consistently by stilbestrol feeding in 18 of 19 experiments reported. The only exception was in a Kansas experiment with steer calves fed a high-roughage ration. Stimulations have been noted as high as 37% in an individual lot of steers receiving a high-grain ration. The average stilbestrol stimulation in gains, however, on the many types of rations and kinds of cattle fed was 16%. Greater gain stimulation was noted on high-grain rations as compared to lesser stimulation on the high-roughage rations.

He said feed costs have been reduced by stilbestrol feeding in 18 of the 19 experiments reported. The average reduction in feed costs was 12%.

Very little difference was noted in carcass characteristics of stilbestrol-fed cattle as compared with cattle not receiving stilbestrol. The use of antibiotics in stilbestrol cattle supplements is of doubtful value at the present time, Dr. Burroughs said.

Stilbestrol has benefited both high- and low-protein supplements as well as supplements containing both high and low levels of molasses and other supplemental ingredients, he said.

Estrogens for Poultry

Dr. George Newell, assistant professor of poultry at Oklahoma A&M College, discussed "The Use of Estrogens in Feeding Poultry." He said stilbestrol has been used for several years to treat broilers and also old male birds. The effects of these are to increase the fatty acid levels in the blood and to increase the deposition of fat throughout the body. These implants are made close to the head which is discarded during the dressing process.

The oral feeding of many "sister" compounds have been tried by researchers at various stations. Until recently, the practice was not allowed by the Food and Drug Administration. When used as a feed ingredient, diethylstilbestrol is not as good as several of the other compounds. Recently one of the commercial laboratories has received approval to incorporate dienesterol diacetate in poultry rations. This compound is very closely related to the other estrogenic materials. Its use as a feed ingredient is very closely controlled by the laboratory. Other compounds may be approved in the future, but as yet cannot be used, Dr. Newell reported.

In his talk on the "Use of Estrogens in Feeding Lambs," Duane Acker, instructor of animal husbandry at Iowa State College, said the use of diethylstilbestrol in lamb fattening rations at extremely low levels has not shown to be profitable in every case. He said research completed at the Fort Reno Experiment Station at El Reno, Okla., last winter indicated that lambs receiving ⅛ mg. stilbestrol per pound of feed gained about 15% faster on about 15% less feed per pound of gain than lambs not receiving stilbestrol. Results from other experiment stations has not always been as encouraging as this, however, he stated.

The feeding of stilbestrol to lambs at these low levels has not been so detrimental to the lambs' welfare during the feeding period as has been the implantation of pellets of stilbestrol. Many lambs implanted with stilbestrol pellets during the last five years have shown many abnormalities such as a prolapse of the uterus, prolapse of the rectum and abnormalities of the reproductive tract, Mr. Acker said.

The reason that the response in rate of gain and feed efficiency due to the feeding of stilbestrol has been so inconsistent is not known, Mr. Acker said.

Turkey Feeds

Dr. Couch also gave a talk on "Formulation of Turkey Feeds" in which he discussed the starting poult, from one day to eight weeks of age; the growing poult, from 8 to 16-18 weeks of age, and the finishing turkey, from 16 to 18 weeks on until the birds are marketed.

He said the turkey starter should contain 28% protein according to the

FEEDSTUFFS
LEADER IN THE FIELD

Fredrick D. Randall

PARTICIPANT — One of the speakers at the recent 12th annual meeting of the Cincinnati Section of the American Association of Cereal Chemists and the Ohio Valley District of the Association of Operative Millers was Frederick D. Randall, Eli Lilly & Co., Indianapolis.

National Research Council. The turkey starters available to the trade contain from 26 to 28% protein. It is wise to add 1 lb. of feeding grade methionine per ton to the turkey starter. Condensed fish solubles and fish meal are added primarily to supply the unidentified "fish factor."

Growing turkeys require a source of the "whey factor," which is found in dried whey, butyl fermentation solubles, distillers dried solubles and dried brewers yeast. Two and one half per cent of at least two of these sources of the "whey factor" should be used in the turkey starter, he said. The turkey requires a minimum of 1% phosphorus and 2% calcium. It is recommended that the turkey starter have at least ⅓ lb. of technical grade manganese sulfate.

Practically all turkey feeds manufactured today contain an antibiotic or combination of antibiotics. Dr. Couch said that higher levels of antibiotics than the recommended ones will probably produce better results. There are instances where the high level antibiotic feeding technique may also be utilized.

Speaking of turkey grower, Dr. Couch said the vitamin and antibiotic fortification of the turkey grower is about the same as for the turkey starter. The protein content of the turkey grower is decreased to 20%. Such a decrease is usually initiated after the eighth week and the 20% level of protein is fed from the eighth week through the 16th or 18th weeks.

Feed manufacturers and turkey raisers should guard against the use of a 20% feed as a concentrate, Dr. Couch said. A turkey grower feed that is formulated to meet the nutrient needs of the poults during the growing period from 8 to 16 or 18 weeks should not be fed with grain as a concentrate. If the turkey raiser plans to use home grown grains or desires to purchase his own grains, then it is up to the feed manufacturer and nutritionist to provide a concentrate for the grower to use the correct proportion of grains so that the nutrient requirements of the growing turkey will not be neglected, he said.

Dr. Couch stated that much of the leg weakness and other maladies which affect the turkey industry can be eliminated if the nutritionist and the feed manufacturer will provide the proper concentrate to be fed with grain. This concentrate should be formulated and fortified in such a manner that the nutrient requirements of the turkeys will be taken care of.

It is recommended that the turkey finisher feed contain 15 to 16% protein or that the combination of grain and concentrates be balanced in such a manner that the turkeys will be receiving 15 to 16% protein during the period from 16 to 18 weeks to market, Dr. Couch said. Vitamin, antibiotic and mineral fortifications should be the same as for the turkey starter, he said.

A. E. Staley Company To Add Warehouse

DECATUR, ILL. — Contracts have been let by the A. E. Staley Manufacturing Co. for a feed warehouse at its Decatur, Ill., plant.

The new building, to provide storage for 2,000 tons of finished feed, will adjoin the company's formula feed plant completed last year at a cost of a million dollars. Plans call for the concrete and steel structure to be finished by May 1.

Rapid expansion of the company's feed business is one reason, according to E. E. Rhodes, soybean division manager, for the decision to build this warehouse, which is to cost in excess of $100,000.

Clyde Thompson, the company's formula feed sales department manager, said plans for the future include packaging facilities in the proposed building for specialty products, such as dog foods.

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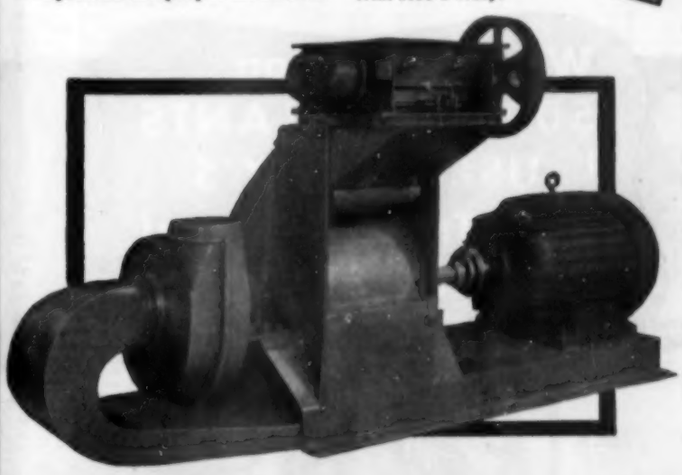

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More Use of Urea in Feed Predicted As Result of "Complexing" Findings

NEWTON, N.J.—Further increases in the use of urea in feeds for ruminants are predicted as a result of findings announced this week by the Limestone Products Corporation of America, Newton. The prediction is based on findings by Dr. Harry W. Titus of the Lime Crest Research Laboratory that if urea is first "complexed" with other chemical compounds, it is much less toxic than when it is included in the feed as "free" urea.

The second largest use of urea today is in animal feeds. This use of urea has been growing in the past several years, and at a somewhat accelerated rate. The current use is reported to be almost double that of last year.

"One of the drawbacks to a greater use of urea has been its 'toxicity' under certain conditions," the corporation said in announcing the latest findings. "Care must be taken not to feed too much and not to feed it in a too concentrated form. One explanation of this 'toxicity' is that when too much urea is fed—or when it is fed in a too concentrated form—ammonia is released at a rate greater than that at which the animal can handle it."

Dr. Titus has reported that if urea is first "complexed" with other chemical compounds, it is much less toxic than when it is included in the feed as free urea.

Dr. Titus used chickens as experimental animals because they are much more susceptible to urea poisoning than are ruminants. He said he was able to feed much larger quantities of complexed urea than of free urea without observing digestive disturbances or retardation of growth.

The reduced toxicity of complexed urea my be explained as resulting from a slower release of ammonia, the company said. But this may be—and probably is—only a part of the full explanation because Dr. Titus observed that strongly toxic materials, such as oxalic acid and nitric acid, have a greatly reduced toxicity when they are complexed with urea.

Numerous complexes of urea with other chemical compounds have been investigated at the Lime Crest Research Laboratory. "In virtually every case," the company said, "the complex was found to be much less toxic than the most toxic member of the complex when the latter was fed in its free form."

According to the announcement, of special interest, from the standpoint of feeding urea to ruminants, are the following complexes:

Urea phosphate ($CO(NH_2)_2 \cdot H_3PO_4$),

Urea calcium sulphate ($4CO(NH_2)_2 \cdot CaSO_4$),

Urea sodium chloride hydrate ($4CO(NH_2)_2 \cdot NaCl \cdot H_2O$),

Urea complexes with certain trace mineral compounds,

Urea adducts (complexes) with the fat acids, such as that with propionic acid.

Various mixtures of these complexes could be used to supply suitable quantities of phosphorus, calcium, sulphur, sodium chloride, trace minerals and fat acids, as well as an increased allowance of nitrogen for the replacement of a proportionately larger quantity of protein.

Another potential value of the findings is that they suggest a way to reduce the toxicity of those therapeutic agents, coccidiostats, and "deworming" agents that will form usable complexes with urea. Not all suitable materials form such complexes, but many of them do, according to the announcement.

Country Elevator Short Course Announced

URBANA, ILL.—Plans for holding the first short course for country elevators at the University of Illinois College of Agriculture are being completed.

Open to managers, employees or to anyone interested in entering the grain business, the course will be held Nov. 28-Jan. 19 in conjunction with the university's winter school in agriculture.

Subjects to be included in the course are grain elevator management problems, agricultural marketing and prices, crop production, soil management, farm arithmetic and others.

More information may be obtained from H. L. Sharp at the university.

Photo shows HARDY'S automatic scale feeders for salt and trace minerals (several of them batch-premixed) — Accuracy is assured!

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Salt	97.000%
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Manganese	1.370%
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Cobalt	0.013%
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Both Formulae also available with Iodine and Manganese only.

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SCHOOL DEDICATION CEREMONIES

(Continued from page 1)

City to Manhattan on a special Union Pacific train.

The feed men visited the new feed tech. building and mill in the morning anid then, after a group luncheon at noon, attended the official dedicatory ceremonies presided over by Dr. James McCain, president of Kansas State College.

Principal Speaker

The principal speaker at the dedication was Benjamin F. Fairless, chairman of the executive advisory committee of U. S. Steel Corp., who pointed out that the feed tech program is an important example of teamwork between industry and agriculture.

Responses to his talk were given by Maurice Johnson, Staley Milling Co., Kansas City, for industry; Dr. Arthur D. Weber, Kansas State dean of agriculture, for education, and George F. Andrews, president of the Kansas Livestock Assn., for agriculture.

B. D. Eddie, Superior Feed Mills, Oklahoma City, chairman of the feed technology advisory committee, presented to Dr. McCain a scroll documenting the occasion. The scroll says: "On behalf of the feed manufacturing and allied industries of the U.S., the feed technology advisory committee is honored and privileged to present to Kansas State College these facilities for furthering the education of the young men of our nation in feed technology. The feed industry, one of the 10 largest in America, acknowledges its obligation to agriculture and education and makes this contribution in recognition of the vital need for cooperation between industry, agriculture and higher education for the greater benefit of each."

On behalf of the college, Dr. McCain accepted the new building and equipment and he dedicated the plant and the teachers and scientists using it to a program of research designed to serve not only the industry but also the progress of agriculture and related industries. He also dedicated the plant to the first college edutional program in feed technology to the end that students may be offered new career opportunities and the feed industry may be assured a continuous supply of graduates trained for administration, engineering and scientific positions in feed manufacturing.

Exciting Road Ahead

Mr. Johnson, referring to Mr. Fairless' emphasis on the need for a stronger relationship among industry, agriculture and education, said that "We each feel that the door we have been looking through has just opened. There is a clear, exciting road ahead, a road built for all three of us to travel side by side. We have an unlimited distance to go on that road with education on one side and agriculture on the other."

Mr. Johnson also noted that through dealers, who are "potential extension agents," and with colleges, the feed industry intends more fully to serve agriculture.

Continuing, Mr. Johnson said: "As fellow members of the top 10 industries in America, we in the feed industry accept your (Mr. Fairless') challenge and at the same time issue a warning to you that as of today, your industry and ours are really new competitors in the field of attracting young men from our colleges into our mills, our stores and our offices. That is another great field of competition where everyone wins."

The feed industry, Mr. Johnson said, feels that it is a great duty and privilege to be a partner in the relationship described by Mr. Fairless. "But," he added, "the most overpowering feeling of all is the responsibility we now have to a growing group of educated young men who have chosen us as their lifetime business partners."

Establishment of the feed technology course demonstrates the wisdom and profitability of our rapidly-expanding program of industrial aid to higher education, Mr. Fairless pointed out in his dedicatory address. This is a perfect illustration of the benefits that can be expected from enlightened and mutually helpful cooperation between private industry and an agency of the state, he said.

Teamwork between industry and agriculture, as shown by this project, is the kind of cooperation that is so desperately needed for our national economic welfare, Mr. Fairless declared.

"We have heard about the bamboo curtain and the iron curtain and the threat they pose to human understanding and world peace," he said. "I sometimes wonder if there is not in our own country a kind of 'barbed-wire curtain' which separates urban industry from agriculture, and which poses an equally serious threat to our national growth and prosperity."

"To offset this we need the vital four-way relationship between private industry, agriculture, education and government," Mr. Fairless declared. "We hope that each of us may dedicate himself to the noble farsighted spirit of cooperation which has made this building possible."

Kansas State College is an institution which is constantly seeking to understand agriculture and to assist in the solution of its problems, Dean Weber said in his response.

While a building such as the feed technology wing is the realization of a dream, heavy responsibility for the success of the feed technology program now goes to the educators who direct the program and teach the courses, he said. We shall always welcome the advice and suggestions of the feed industry, he added.

The curriculum in feed technology includes basic and specialized courses in the physical and biological sciences, engineering, agriculture, business administration and other related fields, Dean Weber explained. Motivation toward job opportunities in the formula feed industry is sought throughout the four-year course.

Giving the response from agriculture, Mr. Andrews pointed out that the selection of a land grant college for the site of the feed program is beneficial because of its well-established extension program.

On the special train which took visitors to and from Manhattan, members of the Kansas City Feed Club served as hosts. At the college, faculty members were hosts and guides for the feed men. The return trip included a stop at Abilene, Kansas, where the industry men visited the Eisenhower Museum.

Recorded interviews about the dedication will be broadcast some time during the "Monitor" program which will be carried by all NBC radio stations the week-end of Nov. 19-20. To be heard will be a student in the technology program who will graduate next spring, Maurice Johnson, vice president of Staley Milling Co., Kansas City, and Dr. Arthur D. Weber, dean of agriculture at the college.

DEDICATION, SCHOOL COVERAGE

Editorial coverage of the Midwest Feed Production School held at Kansas City Nov. 7-9 and the dedication of the new feed production facilities at Kansas State College in Manhattan Nov. 10 was handled by the following members of the Feedstuffs staff: Harvey E. Yantis and Roger Berglund, Minneapolis; Martin E. Newell and James W. Miller, Kansas City, and Don E. Rogers, Chicago.

Farm Commodity-Feed Price Ratio

	U.S.	New Eng.	Mid-Atl.	East North Cent.	West North Cent.	South Atl.	East South Cent.	West South Cent.	Mount.	Pac.
CHICKEN-FEED—										
Farm Chickens:										
October, 1955	5.3	4.8	5.0	5.6	5.3	5.3	5.4	5.2	5.1	4.7
September, 1955	5.4	5.3	6.3	6.0	5.3	5.6	5.3	5.1	5.3	4.8
October, 1954	5.7	5.3	4.7	4.0	3.3	4.4	4.1	4.3	4.4	3.2
Average (1944-53)	7.0									
Average (Oct., 1944-53)	6.6									
Broilers:										
October, 1955	4.6	4.5	5.4	4.9	4.8	4.3	4.6	4.5	5.4	4.9
September, 1955	5.3	5.6	6.3	5.7	5.3	5.1	4.9	5.2	5.5	5.5
October, 1954	4.0	3.9	4.8	4.5	4.2	3.8	3.9	4.1	6.1	4.4
TURKEY-FEED—										
October, 1955	9.2	8.3	10.2	10.0	10.8	9.1	8.8	8.4	8.2	7.6
September, 1955	8.9	8.3	10.3	9.8	10.5	7.9	8.4	8.3	8.0	7.3
October, 1954	9.1	8.1	9.1	7.8	8.3	6.9	7.6	6.6	6.7	6.8
Average (1944-53)	9.5									
Average (Oct., 1944-53)	9.6									
EGG-FEED—										
October, 1955	12.5	13.3	14.2	12.5	11.2	13.6	13.2	13.7	12.2	11.9
September, 1955	12.6	14.9	16.1	12.6	11.6	13.0	13.1	11.9	12.6	11.5
October, 1954	8.5	10.1	10.9	8.2	8.4	10.3	9.4	9.4	9.3	7.9
Average (1934-53)	11.7									
Average (Oct., 1934-53)	13.6									

	U.S.	North Atl.	East North Cent.	West North Cent.	South Atl.	South Cent.	West
MILK-FEED—							
October, 1955	1.42	1.44	1.38	1.47	1.59	1.61	1.32
September, 1955	1.36	1.37	1.33	1.42	1.52	1.50	1.28
October, 1954	1.32	1.36	1.28	1.35	1.52	1.43	1.31
Average (1934-53)	1.27						
Average (Oct., 1934-53)	1.38						
BUTTERFAT-FEED—							
October, 1955	21.5	...	19.4	23.6	...	15.4	17.5
September, 1955	21.2	...	19.4	23.3	...	15.3	17.3
October, 1954	19.4	...	18.0	21.6	...	14.0	17.0
Average (1934-53)	23.4						
Average (Oct., 1934-53)	24.4						

HOG-CORN—	U.S.	North Cent.
October, 1955	12.7	13.0
September, 1955	13.7	12.9
October, 1954	12.7	12.8
Average (1934-53)	12.8	13.6
Average (Oct., 1934-53)	13.6	14.4

NOTE: Ratios computed at mid-month by U.S. Department of Agriculture. Ratios represent number of pounds of poultry feed equal in value to 1 lb. live farm chicken, turkey or 1 doz. eggs; pounds broiler growing mash equal to 1 lb. broiler; pounds concentrate rations equal to 1 lb. milk or butterfat; bushels of corn equal to 100 lb. hog. Increases in ratios are favorable to the feeder.

PRODUCTION SCHOOL

(Continued from page 1)

it is so competitive that the difference between a profitable and unprofitable operation is primarily in the economical or uneconomical operation of a feed mill."

James H. Burrell of James H. Burrell & Sons, Inc., St. Louis, noted that many plants require three, four, five or more man-hours per ton in production. On the other hand, the most efficient plants are now down around one man-hour per ton, and in some cases a little less.

In providing answers to some of the questions on how to lower costs while maintaining and improving quality, the school followed the theme of "Costs—Automation—What's New."

Some of the comments regarding automation and the extent to which it can go were regarded as startling. At the same time, these comments were qualified by the speakers who pointed out that automation has already come to the feed mill in some form, that its general application will be gradual, that the goal of mechanized manufacture should be an economical one. Others pointed out that principles of automation can be adopted by small as well as large plants, that some operations might be completely mechanized while others might not.

The goals of automation, the feed men were told, included a reduction in unit labor costs, reduced wastage and production of a uniform product.

While the application of automation is expected to be gradual and may not cover all feed plant operations, one of the speakers said he visualizes the "feed mill of the future" as being under highly mechanized and automatic systems. And he predicted that at least the young men in the industry will see plants similar to the one he described.

As part of a talk on maintenance, Harold M. Wies, the Quaker Oats Co., Chicago, said: "The feed mill of the future would receive orders from salesmen all during the day. These orders would be fed into a machine and at the end of the day this machine would total up all orders and punch tapes so that on the next day the production department would automatically make the feed ordered on the previous day and automatically load it into the boxcar.

"All the while the plant was making this product, packing it and loading it into boxcars automatically, machines would be recording back to other machines the amount of material used in order to record a continuous inventory of every ingredient on hand right up to the moment that that material was used or received.

"As ingredients and materials were used, machines would automatically write orders for more material and ingredients to keep the inventory at a pre-determined level.

"All during the time the machines were automatically producing a product, other machines would continually test the product so that every bag of feed produced would be just exactly like every other bag of feed, and if the feed were off-standard, machines would automatically dump these feed bags to correct the faults.

"At the same time, machines would automatically make out bills for customers and put these bills into envelopes and address them."

While the production school students were hearing this description of the ultimate in automation in feed manufacturing, they also were hearing of present-day applications of the trend, such as automatic batching.

They also were getting advice and tips on various processing and handling operations in feed plants.

In talks and panel discussions, experts from feed and allied companies were telling of new and old methods to meet new and old problems in all phases of processing and handling.

Covered in the three days of daytime and evening sessions were such topics as operating costs, cost control, inventory control, insurance costs, blending, molasses mixing, fire prevention, pelleting, materials handling, packaging, product control, production department cooperation in building sales, maintenance, personnel selection, work simplification and analysis and faulty practices in feed plants.

One of the highlights of the program was a talk at the production school banquet by Dr. W. V. Lambert, dean of the University of Nebraska College of Agriculture, who told of his trip to Russia as chairman of the recent U.S. farm delegation to that country.

The production school talks and several question-and-answer sessions will be reviewed in next week's Feedstuffs.

THE FEED MARKETS

★ ★ ★ ★

Demand — Supply — Trends — Prices

Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bagged, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

ALFALFA MEAL

Los Angeles: Demand fair; trend steady; supply ample; 15% suncured $46.50; 17% dehydrated @ $52.

Philadelphia: Demand slow; supply fair; 17% dehydrated $62.50.

Cincinnati: Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $57.50@60.50; 17% dehydrated, no A $52.50@55.50; 15% fine suncured $42.50@52.50.

New Orleans: Demand fair; trend firm; supply limited; 17% dehydrated, vitamin A guaranteed $55@58; non-guaranteed $52@55; 15% $49@52.

Indianapolis: Demand fair; trend steady to lower; supply sufficient; 13% $45, 17% $58; suncured $40@44.

Seattle: Demand slack; trend easy; supply ample; 15% protein suncured $47 ton, delivered, carlots; 136,000 A unit dehydrated $65 ton, delivered, carlots.

Ft. Worth: Demand good; supply limited; 17% protein, 50,000 A $45, basis f.o.b. Plainview area; northern origin 100,000 A $48 @60, delivered Ft. Worth.

Milwaukee: Demand slow; supply adequate; 17% with 100,000 A guarantee $58; without $52.

Minneapolis: Prices are somewhat easier on regular meal, with demand limited. Quotations: 17% dehydrated, 100,000 units of vitamin A guaranteed $52@55.50; granules and oil-treated $58.50 (bulk $3 ton less); non-guaranteed $47@48.50.

Kansas City: Demand still on a moderate level with offerings adequate and trend about steady; blended grades of 17% dehydrated alfalfa meal with 100,000 units vitamin A guaranteed on arrival $53, sacked, Kansas City; straight grades offered around $47, sacked, Kansas City; no A $43, sacked, Kansas City; suncured No. 1 fine ground $40, sacked, Kansas City; No. 1 ¼ in. $38@39, sacked, Kansas City, and No. 3 ¼ in. $36.

Buffalo: Demand and supply fair; trend steady; $68, sacked, Boston.

Chicago: Demand very slow; supply adequate; 17% dehydrated, with 100,000 units vitamin A guaranteed $51.50@52.50; 17% with no A guaranteed $50@51; 15% dehydrated no A $47@47.50; 13% fine ground suncured $46@46.50.

Boston: Demand light; supply good; dehydrated, 17% $62@63; suncured 13%, Colorado $55.25, South Dakota $50.75.

Memphis: Demand poor; trend higher; supply ample; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $55.

Portland: Demand good; supply ample; trend unchanged; 15% suncured $47.50, delivered Portland; 15% suncured $45, delivered California; dehydrated $55, delivered California.

Omaha: Demand slow; supply ample; 17% dehydrated, non A, papers or burlaps $45; 17% dehydrated, 100,000 A, bulk, greased $49; burlaps or papers $50, greased $52.50.

ALFALFA PELLETS

Omaha: Demand slow; supply ample; 17% dehydrated, 100,000 A, bulk $49, sacked $53.

BARLEY FEED

Los Angeles: Demand fair; trend steady; supply ample; standard rolled $2.96, standard ground $2.92.

Ogden: Supply average; rolled $44@49; whole $37@42.

Philadelphia: Demand slow; supply fair; pulverized $47.

New Orleans: Demand dull; trend higher; supply adequate; pulverized $51@52.20.

Indianapolis: Demand fair; trend strong to higher; supply sufficient; rolled $66, crimped $63, whole $62.

Milwaukee: Demand and supply fair; pulverized, white $48, feed $43; needles $9@30¢.

Seattle: Demand slow; trend easy; supply good; whole $56 ton, ground $58 ton, rolled $57 ton, all ex-warehouse, l.c.l., sacked.

Chicago: Demand quiet; supply ample; $35.

Baltimore: Demand quiet; supply ample; $46.

Boston: Demand slow; supply ample; $45.

Portland: Demand good; supply ample; trend unchanged; rolled $58, ground $56.

San Francisco: Demand fair; supply ample; rolled $61.50, ground $60.50.

BENTONITE (SODIUM)

Chicago: Demand very good; supply adequate, f.o.b. Wyoming and South Dakota shipping points; granular, 30 mesh $15.50; fine granular, 80 to 100 mesh $12.75; powder, 200 mesh $12.50; f.o.b. Belle Fourche, S.D., minimum 30-ton carlot; 80 granular $12.50 net, 200 mesh fine $12.25 net.

BLOOD FLOUR

New Orleans: Demand fair; trend steady; supply adequate; $95@100, local plants.

Louisville: Demand very dull; trend weak; supply good to heavy; $85@90 ton.

BLOOD MEAL

Los Angeles: Demand fair; trend steady; supply ample; $4.75@5 a unit of ammonia.

Ogden: Supply normal; $102.50 ton in 100-lb. bags, f.o.b. Ogden.

Cincinnati: Demand faird; trend steady; supply adequate; $120.

New Orleans: Demand fair; trend steady; supply adequate; $95@100, local plants.

Seattle: Demand slow; trend easy; supply good; $85 ton, f.o.b. local packing plants, truck lots.

Chicago: Demand slow; supply adequate; $120 ton, guaranteed 50% protein.

Louisville: Demand dull; trend weak; supply heavy; $85@90 ton.

Portland: Demand good; supply ample; trend unchanged; $110.

San Francisco: Demand slow; supply ample; $5.50 a unit of ammonia; screened $5.40 per unit of ammonia.

BONE MEAL

Cincinnati: Demand and supply fair; trend steady; $90 ton, sacked, f.o.b. Cincinnati.

New Orleans: Demand good; supply limited; trend steady; imported $56@58, local origin $80@85.

Ft. Worth: Demand fair; supply sufficient; $85, sacked, f.o.b. Ft. Worth, local manufacture.

Louisville: Demand dull; trend easy; supply normal; $70@75 ton.

Omaha: Demand good; supply limited; $85.

San Francisco: Demand good; supply fair; $58.

BONE MEAL (STEAMED)

Los Angeles: Demand fair; trend steady; supply ample; domestic $89.50.

New Orleans: Demand good; supply sufficient; trend steady; $76@80.

Indianapolis: Demand fair; trend unchanged; supply sufficient; $82 ton, sacked.

Seattle: Demand limited; trend steady; supply sufficient; $85 ton, ex-warehouse, l.c.l.

Buffalo: Demand good; trend steady; supply ample; $85 ton, sacked.

Ft. Worth: Demand improved; supply limited; best quality German production 72% B.P.L., 14% phosphorus, 31% calcium $76, 100-lb. paper-lined burlaps, f.o.b. Houston.

Chicago: Demand slow; supply adequate; $66@76.

Boston: Demand slow; supply tight; $95, nominal.

Louisville: Demand dull; trend weak; supply normal; $75@80 ton.

San Francisco: Demand good; supply ample; $82.50.

BREWERS DRIED GRAINS

Los Angeles: Demand fair; trend steady; supply ample; $54, f.o.b. Van Nuys.

Cincinnati: Demand fair; trend steady to higher; supply tight; $53@55.

New Orleans: Demand slow; supply adequate; trend stronger; 24% $51@52.

Ft. Worth: Demand fair; supply very scarce; 24% $56@57, prompt, delivered Ft. Worth.

Milwaukee: Demand and supply fair; $49.

Buffalo: Demand and supply fair; trend steady; $52, bulk, Boston.

Philadelphia: Demand slow; supply fair; $57.

Chicago: Demand fair; supply tightening; 24% $51.

Boston: Demand good; supply tightening; 26% $60@61.50.

Louisville: Demand good; trend stronger; supply scarce; production down over winter season; $50 ton.

Philadelphia: Demand slow; supply light; $55.

BREWERS DRIED YEAST

Los Angeles: Demand moderate; supply ample; trend steady; 10½¢.

Boston: Demand light; supply steady; 11½¢ lb.

Milwaukee: Demand good; supply limited; 10¼@11½¢ lb. in carlots; 10¾@12½¢ l.c.l.

St. Louis: Demand good; supply limited; 10¢ lb. in carlots; 11¢ lb. in ton lots; 13¢ lb. in less than ton lots.

Buffalo: Demand slow; trend easier; supply ample; $10.25 cwt.

Pittsburgh: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11½¢.

New Orleans: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11½¢.

Cincinnati: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11½¢.

New York: Carlots 9¼¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10½¢ lb.; ton lots 11¢ lb., f.o.b. New Jersey.

Milwaukee: Demand good; supply limited; 10¼@11½¢ lb. in carlots; 10¾@12½¢, l.c.l.

Louisville: Demand fair to good; trend steady; supply ample; 10¢ lb.

Omaha: Demand good; supply poor; 11½¢ lb., carloads; 12½¢ lb., less than carloads.

San Francisco: Demand fair; supply good; 10¾¢ lb.

Chicago: Demand good; supply limited; 10@11½¢ lb. in carlots; 10¾@12½¢, l.c.l.

BUTTERMILK-CONDENSED

Los Angeles: Demand fair; trend steady; supply ample; 100-lb. drums $5.25; large barrels $4.60.

Ogden: Supply average; $4.15, 100-lb. drum.

Philadelphia: Demand and supply fair; $4.25.

New Orleans: Demand fair; trend steady; supply ample; $4.25@4.50 cwt.

Indianapolis: Demand fairly good; trend higher; supply ample; 66-lb. drum $3.65; in barrels $3.80 cwt.

Boston: Demand and supply fair; $4 cwt.

Chicago: Demand fair; supply steady; $3.25@3.50 cwt. in carlots.

Louisville: Demand fair; trend steady; supply normal; $4.25 cwt.

San Francisco: Demand fair; supply good; $5.35 cwt.

CALCITE CRYSTALS AND FLOUR

(All prices net, including freight and tax)

New York: Crystals $12.48, flour $9.42.
Buffalo: Crystals $14.20, flour $10.20.
Toledo: Crystals $15.77, flour $11.77.
Boston: Crystals $14.62, flour $10.62.
Limecrest, N.J.: Crystals $9.50, flour $5.50.

CALCIUM CARBONATE

Los Angeles: Demand fair; trend steady; supply ample; meal and flour $10.53 ton, carloads; grits $13.03 ton, carloads.

Cincinnati: Demand fair; trend steady; supply adequate; $8@9.

Minneapolis: Plain $10; iodized (½ lb. KI per ton) $13.50; iodized-manganesed $15.05.

Chicago: Plain $6.56 ton in 100-lb. bags, delivered.

Seattle: Demand steady; supply ample; trend unchanged; $14 ton, ex-warehouse, truck lots.

CHARCOAL

Los Angeles: Demand quiet; supply ample; trend steady; poultry charcoal, oak, 40-lb. bags, in ton lots $2.40.

New Orleans: Demand quiet; supply limited; trend steady; 40-lb. bags oak charcoal $2.40; poultry charcoal, 50-lb. bags $2.55.

Chicago: Demand quiet; supply limited; poultry charcoal $102 ton in 50-lb. multiwalls.

Boston: Demand and supply light; $78.

San Francisco: Demand steady; supply ample; $59.50.

COCONUT MEAL

Los Angeles: Demand moderate; trend steady; supply ample; cake, ex-dock, November $71@72.

Seattle: Demand limited; trend steady; supply limited; $74 ton, ex-dock, 30-day shipment from Philippines.

San Francisco: Demand fair; supply ample; solvent $64.50, expeller $69.

Portland: Demand good; supply scarce; trend unchanged; $75.

COD LIVER OIL (FORTIFIED)

Dayton: Trend steady; price per lb. in 55-gal. drums (410 lb.): 300 ICU, 1,500 A 19¼¢, 2,250 A 20½¢, 3,000 A 21¾¢; 600 ICU, 1,500 A 20½¢, f.o.b. Dayton.

New York: Trend steady; price per lb. in 55-gal. drums (400 to 420 lb.): 300 ICU, 750 A 16@18¢, 1,500 A 17½@19½¢, 2,250 A 19@22¢, 3,000 A 19½@23¢; 600 ICU, 1,500 A 18@19½¢, 2,250 A 20@22¢, 3,000 A 22@23½¢; f.o.b. Pennsylvania, New Jersey, New York or Massachusetts. Ranges include variance in offerings and f.o.b. shipping points.

Boston: Demand slow; supply good; 600 D, 2,250 A 22¢ lb.; 300 D, 2,250 A 21¢; 300 D, 1,500 A 18½¢.

CONDENSED FISH SOLUBLES

Los Angeles: Demand fair; trend steady; supply ample; 5¢.

Boston: Demand active; supply fair; 4¢ lb.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis, bulk basis $5 less)

Minneapolis: Feed $49.77, meal $65.77.
Atlanta: Feed $56.92, meal $72.92.
Birmingham: Feed $55.18, meal $71.18.
Boston: Feed $54.15, meal $70.15.
Chicago: Feed $44, meal $60.
Cleveland: Feed $51.04, meal $67.04.
Denver: Feed $53, meal $69.
Ft. Worth: Feed $51.50, meal $67.50.
Indianapolis: Feed $48.50, meal $64.50.
Kansas City: Feed $44, meal $60.
Louisville: Feed $50.11, meal $66.11.
New Orleans: Feed $52.88, meal $66.88.
New York: Feed $53.69, meal $69.69.
Norfolk: Feed $53, meal $69.
Philadelphia: Feed $53.23, meal $69.23.
Pittsburgh: Feed $51.50, meal $67.50.
St. Louis: Feed $44, meal $60.

CORN OIL MEAL

Cincinnati: Demand poor; trend steady; supply adequate; $51.85@52.85.

New Orleans: Demand poor; supply adequate; trend steady; $59.88.

Louisville: Demand slow; trend steady; supply normal; $51.85 ton.

COTTONSEED OIL MEAL

Los Angeles: Demand fair; trend steady; supply ample; $63@64.

Ogden: Supply average; 41% $78@82.

Philadelphia: Demand slow; supply fair; $67.

Cincinnati: Demand fair; trend steady to lower; supply adequate; $60@63.

New Orleans: Demand light; trend lower; supply adequate; 41% old process $69@71.50.

Indianapolis: Demand improving; trend shade higher; supply sufficient; $66 41%, sacked.

Seattle: Demand fair; trend steady; supply ample; $80 ton, delivered, carlots, 41% expeller process.

Ft. Worth: Demand fair; supply adequate; carlots, sacked, central and north Texas origin, 41% old process $59@62; solvent, 41% low gossypol, fat added $61@59, delivered Ft. Worth; pellets $2 additional.

Chicago: Demand slow; supply plentiful; hydraulic $61@62; solvent $60@61.

Boston: Demand slow; supply good; $69.62.

Louisville: Demand fair; trend easy; supply normal; old process $60.52 ton; new process, about $2 ton less.

Omaha: Demand pretty good; supply adequate; 41% solvent $67, pellets $71.50.

Portland: Demand slow; supply ample; trend unchanged; $65, f.o.b. Los Angeles.

San Francisco: Demand good; supply ample; expeller $62.50, solvent $66.

Memphis: Demand slow; trend down; supply plentiful; prime 41% protein, old process $61.50, sacked; new process, 41% solvent $59.50, sacked.

Wichita: Demand slow; supply sufficient; 41% $63.

Kansas City: Demand only fair; offerings adequate; $62.50@63.50, sacked, Memphis.

Buffalo: Demand fair; trend steady to downward; supply good; $62.25, sacked, Boston.

Atlanta: Demand slow; trend weak; supply ample; 41% $56, sacked, immediate.

A AND D FEEDING OIL

Dayton: Trend steady; price per lb. in 55-gal. drums (410 lb.): 300 ICU, 750 A 13¢; 1,500 A 21¢, f.o.b. Dayton.

New York: Trend steady; price per lb. in 55-gal. drums (400-420 lb.): 300 ICU, 750 A 13½@17¢, 1,500 A 15½@19½¢, 2,250 A 17½@21½¢, 3,000 A 19½@21¢; 600 ICU, 1,500 A 16@20½¢, 2,250 A 18@19½¢, 3,000 A 20@25¢; f.o.b. New York, Ney Jersey, Massachusetts or Pennsylvania. Ranges include variance in offerings and f.o.b. shipping points.

Milwaukee: Demand and supply fair; 55 D, 100 A 15¢; concentrated vitamin oils, 300 D, 750 A 19¢; 300 D, 1,500 A 21¢; 300 D, 2,250 A 23¢.

Minneapolis: All with DPPD—10,000 A 38¢ lb.; 300 D, 2,250 A 29¢ lb.; 300 D, 1,500 A 25¢ lb.; 300 D, 750 A 16¢ lb.

Buffalo: Demand steady; supply adequate; 300 D, 750 A 18½¢ lb.; 300 D, 1,500 A 20½¢ lb.; 300 D, 2,250 A 23½¢ lb.; 300 D, 3,000 A 26½¢ lb.; 600 D, 4,000 A 31¢ lb.; straight vitamin A feeding oil 10½@11½¢ per M. U., drum lots, drums included, basis Buffalo.

Seattle: Demand and trend steady; supply ample; 300 D, 2,250 A 22¢ lb., 300 D, 1,500 A 19¢ lb., 300 D, 750 A 17¢ lb., all ex-warehouse, drums included.

Chicago: Demand fair to good; supply adequate; straight A feeding oil, with 10,000 units vitamin A per gram 9@10¢ a million units of vitamin A, l.c.l., packed in 55-gal. drums, f.o.b. Chicago; drums included.

Boston: Demand slow; supply good; 600 D, 1,500 A 17¢ lb.; 300 D, 2,250 A 19¢; 300 D, 1,500 A 16¢; 300 D, 750 A 15¢.

D ACTIVATED ANIMAL STEROL, POWDERED

Cincinnati: Demand poor; trend steady; supply ample; 1,500 ICU 11@12¢; 3,000 ICU 13¢, warehouse.

Kansas City: Demand light; trend steady; supply ample; 10½@11¢ lb.

New York: Trend steady; price per lb. in 50- and 100-lb. bags or 100-lb. drums: 1,500 ICU 10@13.6¢ bagged, 11@13¢ drums; 3,000 ICU 16@19¢ bagged, 17@18¢ drums, f.o.b. New York and New Jersey.

DEFLUORINATED PHOSPHATE

Tupelo, Miss.: $49.50.
Houston: 19% $69.50.
Wales, Tenn.: $62.10.
Coronet, Fla.: Minimum phosphorus 17%, minimum calcium 34%, maximum fluorine .17% $56 net ton, f.o.b. Coronet in 100-lb. multiwall bags, $54 in bulk; minimum phosphorus 14.5%, minimum calcium 34%, maximum fluorine 0.145% $48 net ton, f.o.b. Coronet, in 100-lb. multiwall bags, $46 in bulk.

DICALIUM PHOSPHATE

Cincinnati: 18% phosphorus $78@81.50.

Portland: Demand good; supply ample; trend unchanged; $98.

Minneapolis: 18.5% phosphorus, 24% calcium granular or fine ground $82.99 ton, delivered; $3 ton less in bulk.

Trenton, Mich.: Minimum phosphorus 21%, maximum fluorine .01% guaranteed $84, f.o.b. Trenton, in 100-lb. multiwall bags; minimum phosphorus 18½%, maximum fluorine .01% guaranteed $74, f.o.b. Trenton in 100-lb. multiwall bags.

East St. Louis: Monocalcium or dicalcium phosphate, 18½% phosphorus $74 ton, bagged, f.o.b. cars.

Adams, Mass.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $74 ton, f.o.b. Columbia, in 100-lb. multiwall bags. Freight equalized with nearest producing point, carload basis.

Columbia, Tenn.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $74 ton, f.o.b. Columbia, in 100-lb. multiwall bags. Freight equalized with nearest producing point, carload basis.

Bonnie, Fla.: Demand improving; supply adequate; minimum phosphorus 18½% granular $74. Freight equalized with closest dicalcium phosphate producing point, carload basis.

St. Louis: Minimum phosphorus 18½%, maximum fluorine .01% guaranteed $74, f.o.b. St. Louis in 100-lb. multiwall bags.

Chicago: Demand fair; supply adequate; stock food grade, 18.5% phosphorus, 20,000 lb. or more $74 net ton in 100-lb. papers, basis Chicago Heights, Ill.; less than 20,000 lb. $79 net ton; 21% phosphorus 20,000 lb. or more $84 net ton, basis Chicago Heights and Nashville, Tenn., less than 20,000 lb. $89 net ton.

DISTILLERS DRIED GRAINS

Cincinnati: Demand fair; trend easy; supply fair; $49.50@56.

New Orleans: Demand poor; supply adequate; trend steady; $52@53.

Buffalo: Demand poor; trend steady to lower; supply fair; $55, bulk, Boston.

Boston: Demand slow; supply good; domestic light $58; Canadian, medium $57.75.

Louisville: Demand fair to good; trend easy; supply reasonable; offerings apparently larger than market is absorbing. Some producers sold up have no problems. Others trying to force demand by lower prices; bourbon light $51, dark $53, solubles $50.

San Francisco: Demand fair; supply ample; $57.50; solubles $50.

DRIED BEET PULP

Los Angeles: Demand moderate; trend steady; supply ample; $56.47, paper bags.

Ogden: Supply average; $45@50.

Seattle: Demand good; trend firm; supply limited; $49 ton, delivered, carlots.

Milwaukee: Demand fair; supply good; $60.

Boston: Demand active; supply improving; $66.

New Orleans: Demand fair; supply limited; trend stronger; $60@63.50.

Buffalo: Demand fair; trend steady; supply poor; $65, sacked, Boston.

Atlanta: Demand good; trend strong; supply limited; $74.50, sacked, immediate.

Ft. Worth: Demand slow; supply moderate; carlots, 50-lb. papers $65@66, delivered Ft. Worth, November-December shipment.

San Francisco: Demand good; supply fair; $48.96.

DRIED CITRUS PULP

Los Angeles: Demand active; supply limited; trend stronger; f.o.b. southern California producers' plants: orange $48 sacked, $43 bulk.

Atlanta: Demand good; trend steady; supply limited; pulp $56.50, meal $51.50, sacked, immediate.

Buffalo: Demand fair; unquoted because of scarcity.

New Orleans: Demand good; supply limited; trend steady; $56@57.50.

New York: Trend steady; price per lb. in 55-gal. drums (400-420 lb.): 300 ICU, 750 A 13½@17¢, 1,500 A 15½@19½¢, 2,250 A 17½@21½¢, 3,000 A 19½@21¢; 600 ICU, 1,500 A 16@20½¢, 2,250 A 18@19½¢, 3,000 A 20@25¢; f.o.b. New York, Ney Jersey, Massachusetts or Pennsylvania. Ranges include variance in offerings and f.o.b. shipping points.

Milwaukee: Demand and supply fair; 55 D, 100 A 15¢; concentrated vitamin oils, 300 D, 750 A 19¢; 300 D, 1,500 A 21¢; 300 D, 2,250 A 23¢.

Minneapolis: All with DPPD—10,000 A 38¢ lb.; 300 D, 2,250 A 29¢ lb.; 300 D, 1,500 A 25¢ lb.; 300 D, 750 A 16¢ lb.

Buffalo: Demand steady; supply adequate; 300 D, 750 A 18½¢ lb.; 300 D, 1,500 A 20½¢ lb.; 300 D, 2,250 A 23½¢ lb.; 300 D, 3,000 A 26½¢ lb.; 600 D, 4,000 A 31¢ lb.; straight vitamin A feeding oil 10½@11½¢ per M. U., drum lots, drums included, basis Buffalo.

Seattle: Demand and trend steady; supply ample; 300 D, 2,250 A 22¢ lb., 300 D, 1,500 A 19¢ lb., 300 D, 750 A 17¢ lb., all ex-warehouse, drums included.

Chicago: Demand fair to good; supply adequate; straight A feeding oil, with 10,000 units vitamin A per gram 9@10¢ a million units of vitamin A, l.c.l., packed in 55-gal. drums, f.o.b. Chicago; drums included.

Boston: Demand slow; supply good; 600 D, 1,500 A 17¢ lb.; 300 D, 2,250 A 19¢; 300 D, 1,500 A 16¢; 300 D, 750 A 15¢.

D ACTIVATED ANIMAL STEROL, POWDERED

Cincinnati: Demand poor; trend steady; supply ample; 1,500 ICU 11@12¢; 3,000 ICU 13¢, warehouse.

Kansas City: Demand light; trend steady; supply ample; 10½@11¢ lb.

New York: Trend steady; price per lb. in 50- and 100-lb. bags or 100-lb. drums: 1,500 ICU 10@13.6¢ bagged, 11@13¢ drums; 3,000 ICU 16@19¢ bagged, 17@18¢ drums, f.o.b. New York and New Jersey.

DEFLUORINATED PHOSPHATE

Tupelo, Miss.: $49.50.
Houston: 19% $69.50.
Wales, Tenn.: $62.10.
Coronet, Fla.: Minimum phosphorus 17%, minimum calcium 34%, maximum fluorine .17% $56 net ton, f.o.b. Coronet in 100-lb. multiwall bags, $54 in bulk; minimum phosphorus 14.5%, minimum calcium 34%, maximum fluorine 0.145% $48 net ton, f.o.b. Coronet, in 100-lb. multiwall bags, $46 in bulk.

DICALIUM PHOSPHATE

Cincinnati: 18% phosphorus $78@81.50.

Portland: Demand good; supply ample; trend unchanged; $98.

Minneapolis: 18.5% phosphorus, 24% calcium granular or fine ground $82.99 ton, delivered; $3 ton less in bulk.

Trenton, Mich.: Minimum phosphorus 21%, maximum fluorine .01% guaranteed $84, f.o.b. Trenton, in 100-lb. multiwall bags; minimum phosphorus 18½%, maximum fluorine .01% guaranteed $74, f.o.b. Trenton in 100-lb. multiwall bags.

East St. Louis: Monocalcium or dicalcium phosphate, 18½% phosphorus $74 ton, bagged, f.o.b. cars.

Adams, Mass.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $74 ton, f.o.b. Adams, in 100-lb. multiwall bags. Freight equalized with nearest producing point, carload basis.

Columbia, Tenn.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $74 ton, f.o.b. Columbia, in 100-lb. multiwall bags. Freight equalized with nearest producing point, carload basis.

Bonnie, Fla.: Demand improving; supply adequate; minimum phosphorus 18½% granular $74. Freight equalized with closest dicalcium phosphate producing point, carload basis.

St. Louis: Minimum phosphorus 18½%, maximum fluorine .01% guaranteed $74, f.o.b. St. Louis in 100-lb. multiwall bags.

Chicago: Demand fair; supply adequate; stock food grade, 18.5% phosphorus, 20,000 lb. or more $74 net ton in 100-lb. papers, basis Chicago Heights, Ill.; less than 20,000 lb. $79 net ton; 21% phosphorus 20,000 lb. or more $84 net ton, basis Chicago Heights and Nashville, Tenn., less than 20,000 lb. $89 net ton.

DISTILLERS DRIED GRAINS

Cincinnati: Demand fair; trend easy; supply fair; $49.50@56.

New Orleans: Demand poor; supply adequate; trend steady; $52@53.

Buffalo: Demand poor; trend steady to lower; supply fair; $55, bulk, Boston.

Boston: Demand slow; supply good; domestic light $58; Canadian, medium $57.75.

Louisville: Demand fair to good; trend easy; supply reasonable; offerings apparently larger than market is absorbing. Some producers sold up have no problems. Others trying to force demand by lower prices; bourbon light $51, dark $53, solubles $50.

San Francisco: Demand fair; supply ample; $57.50; solubles $50.

DRIED BEET PULP

Los Angeles: Demand moderate; trend steady; supply ample; $56.47, paper bags.

Ogden: Supply average; $45@50.

Seattle: Demand good; trend firm; supply limited; $49 ton, delivered, carlots.

Milwaukee: Demand fair; supply good; $60.

Boston: Demand active; supply improving; $66.

New Orleans: Demand fair; supply limited; trend stronger; $60@63.50.

Buffalo: Demand fair; trend steady; supply poor; $65, sacked, Boston.

Atlanta: Demand good; trend strong; supply limited; $74.50, sacked, immediate.

Ft. Worth: Demand slow; supply moderate; carlots, 50-lb. papers $65@66, delivered Ft. Worth, November-December shipment.

San Francisco: Demand good; supply fair; $48.96.

DRIED CITRUS PULP

Los Angeles: Demand active; supply limited; trend stronger; f.o.b. southern California producers' plants: orange $48 sacked, $43 bulk.

Atlanta: Demand good; trend steady; supply limited; pulp $56.50, meal $51.50, sacked, immediate.

Buffalo: Demand fair; unquoted because of scarcity.

New Orleans: Demand good; supply limited; trend steady; $56@57.50.

San Francisco: Demand good; supply fair; $55.

DRIED BUTTERMILK

Los Angeles: Demand fair; trend steady; supply ample; $13.75@14.

Ogden: Supply normal; $8.65, 100-lb. bag.

New Orleans: Demand fair; trend easier; supply adequate; $11.25@11.50.

Indianapolis: Demand fair; trend unchanged; supply plentiful; $11.50, sacked.

Ft. Worth: Demand fair; supply extremely limited; local production $12 cwt., f.o.b. Ft. Worth.

Minneapolis: Market easier; demand limited; $10@10.50 cwt.

Milwaukee: Demand good; supply fair; 12@12½¢.

Buffalo: Demand excellent; trend firmer; supply very limited; $11.45 cwt.

Chicago: Demand steady; supply light; $10.25@10.50 cwt. in carlots.

Boston: Demand fair; supply scarce; 11½¢ lb., nominal.

Louisville: Demand fair; trend easy; supply normal; $10.50@11 cwt.

San Francisco: Demand fair; supply ample; $13.75 cwt.

Wichita: Demand slow; supply adequate; $8.25 cwt.

DRIED SKIM MILK

Los Angeles: Demand fair; trend steady; supply ample; $13.50.

Philadelphia: Demand dull; supply light; $12.50@13, nominal.

Cincinnati: Demand fair; trend steady; supply adequate; 11½@12½¢.

New Orleans: Demand fair; trend steady; supply adequate; $11.50@12.50 cwt.

Chicago: Demand steady; supply light; $11.75@12 cwt. in carlots.

Minneapolis: Market steady at $11.50@12 cwt.

Milwaukee: Demand good; supply fair; 13½@14¢.

Buffalo: Demand good; trend steady; supply ample; $12.50 cwt.

Boston: Demand fair; supply ample; 12@12½¢ lb.

Louisville: Demand fair; trend easy; supply normal; $12@12.25 cwt.

Portland: Demand good; trend unchanged; supply ample; $12.50.

San Francisco: Demand and supply fair; 13½¢ lb.

DRIED WHEY

Los Angeles: Demand fair; trend steady; supply ample; fortified $6.15; unfortified $6.

Ogden: Supply average; $6.90, 100-lb. bag.

Philadelphia: Demand slow; supply fair; $6.25.

Cincinnati: Demand fair; trend steady; supply adequate; $6.

New Orleans: Demand fair; trend steady; supply adequate; $6.50@7 cwt.

Seattle: Demand steady; supply ample; trend unchanged; $7 cwt., ex-warehouse, l.c.l.

Ft. Worth: Demand fair; supply adequate; carlots, standard $6 cwt., sacked, delivered Ft. Worth or any Texas point or in ton lots, f.o.b. warehouse, Ft. Worth.

Chicago: Demand fair; supply adequate; $6 cwt. in carlots.

Boston: Demand poor; supply plentiful; 6¢ lb.

Louisville: Demand fair; trend steady; supply normal; $6@6.50 cwt.

Portland: Demand good; supply ample; trend unchanged; $6.50.

Kansas City: Demand fair; trend steady; supply fair; straight grade $6 cwt.; partially delactosed $6.50.

Buffalo: Demand poor; trend steady; supply fair; $6 cwt., delivered.

San Francisco: Demand steady; supply good; $6 cwt.

FISH MEAL

San Francisco: Demand slow; supply ample; $2.40 a unit of protein.

Portland: Demand good; supply limited; trend unchanged; $2.40, f.o.b. Vancouver; $2.50, f.o.b. California.

Louisville: Demand dull; trend steady; supply normal; $165@170 ton.

Boston: Demand good; supply increasingly scarce; $153@155.

Chicago: Demand easy; supply limited; menhaden fish meal, 60% protein, f.o.b. East Coast $150@155 ton; 60% blended West Coast $144@145; Northwest herring-salmon blend $144@145; herring meal 73% protein $2.35@2.40 a unit of protein.

Ft. Worth: Demand good; increased offerings; Angola 60% $158, f.o.b. cars or trucks, Houston, last half November, sacked, 100-lb. burlaps.

Minneapolis: Market steady to easier; 60% meal $160@162; 70% herring $2.40 a unit of protein.

Atlanta: Demand fair; trend strong; supply limited; $166, sacked, immediate.

Buffalo: Demand good; trend higher; supply very limited; $162 ton, bulk; $165, sacked.

Milwaukee: Demand and supply fair; 60% $177.

Seattle: Demand slow; trend easy; supply improving; Canadian herring meal $2.50 a unit protein, Seattle; blended and salmon meal $2.35 a unit, f.o.b. local plants.

Indianapolis: Demand good; trend steady to unchanged; supply plentiful; $172 ton, sacked.

New Orleans: Demand good; trend higher; supply scrace; 60% $154@162.

Cincinnati: Demand good; trend strong; supply fair; $160@170.

Ogden: Supply normal; $2.20 a unit, f.o.b. Coast; 65% $171@173.

Los Angeles: Demand fair; trend steady; supply ample; $2.40 a unit of protein.

HAY

Los Angeles: Demand slow; trend steady; supply ample; U.S. No. 1 $35@36.50; U.S. No. 3 leafy $33@35; U.S. No. 2 green $33@34; U.S. No. 3 $30@32.

Ogden: Supply normal; colder weather stimulating demand; $1.25 bale; $24@30 ton in the barn.

Philadelphia: Demand slow; supply fair; $32 as to quality.

Buffalo: Demand steady; No. 2 timothy $18@20; No. 2 alfalfa $26@28; straw $10@14.

Cincinnati: Demand slow; trend steady; supply adequate; No. 1 timothy (new) $21; first cutting No. 1 alfalfa (new) $21, second cutting $25; fancy No. 1 clover and timothy mixed $27; No. 1 red clover $23; bright wheat or oat straw $14.

New Orleans: Demand dull; trend steady; supply adequate; timothy and clover $28@30, baled alfalfa $30@34, prairie $23@25.

Seattle: Demand slow; trend steady; supply good; $37 ton, delivered truck loads for U.S. No. 2 green.

Ft. Worth: Demand fair for alfalfa, slow for others; supply plentiful; carlots, baled, No. 1 alfalfa $38@40, No. 2 $36@38; prairie No. 2 $28@30; Johnson grass No. 2 $26@28; delivered TCP.

Boston: Demand steady; supply plentiful; No. 1 timothy $38@40, No. 2 $35.

Louisville: Demand very dull; trend steady; supply good; No. 1 hay, timothy, clover or mixed timothy and clover $30, No. 2 $28; local alfalfa, No. 1 $30; straw $14@15; lespedeza hay, No. 1 $25.

Wichita: Demand fair; supply plentiful; prairie $18@23, alfalfa $25@30.

HOMINY FEED

Cincinnati: Demand fair; trend steady to lower; supply adequate; $43.50@45.

New Orleans: Demand fair; trend weak; supply adequate; $47@50.

Indianapolis: Demand good; trend downward; supply ample; $45 ton, including state tags and used bags.

Seattle: Demand slow; trend firm; supply good; $55 ton, delivered, sacked.

Chicago: Demand slow; supply adequate; $41.50@42.

Milwaukee: Demand and supply fair; $46.50.

Kansas City: Corn has influenced a slightly stronger tone in hominy feed; offerings practically nominal at $43, sacked, Kansas City.

Buffalo: Demand fair; trend steady to lower; supply good; $47, bulk, Boston.

Boston: Demand slow; supply plentiful; $52.50.

Louisville: Demand fair; trend steady; supply ample; last quotations heard were at $44.50.

Memphis: Demand nil; trend lower; supply ample; white $46, yellow $47.

LINSEED OIL MEAL

Minneapolis: Demand has slowed somewhat, but good shipping directions are being received by crushers and prices are firm at $61@61.50, bulk, Minneapolis, for 36% meal; 22% flaxseed screenings oil feed available for nearby in limited offerings at $44.50, bulk, Minneapolis.

Wichita: Demand fair; supply sufficient; 34% $40.

San Francisco: Demand and supply fair; $70.

Portland: Demand slow; supply ample; trend unchanged; $64, f.o.b. Los Angeles.

Omaha: Demand pretty good; trend stronger; supply adequate; 34% expeller $79.50, pellets $82; 36% solvent $76.50, pellets $77.

Louisville: Demand dull; trend firm to stronger;; supply normal; new process $78.35, old process $82.35.

Boston: Demand slow; supply scarce; $80.

Kansas City: No change in price with interest limited and offerings light; $61, bulk, Minneapolis.

Milwaukee: Demand and supply fair; 34% $73, 36% $68.

Chicago: Linseed oil meal prices remained virtually unchanged in the central states during the week ending Nov. 9, with a thin market providing only slight indication of the market trend. Traders say it will take an upturn in formula feed business to inject any life into the linseed meal market. Quotations Nov. 9: solvent linseed oil meal $70.50, expeller $76.50@77.

Ft. Worth: Demand slow; supply light; carlots, 36% or better $83.32, November; $81.32 January; February-April $80.32, delivered Ft. Worth; pellets $2.50 premium.

Seattle: Demand slow; trend steady; supply sufficient; 34% solvent process $90 ton, delivered, carlots; 36% expeller process $80 ton, delivered, carlots.

Indianapolis: Demand fair; supply ample; trend unchanged; new process $79 ton; pellets $75 ton.

New Orleans: Demand slow; trend easier; supply ample; 32% or higher $80.50@83.

Cincinnati: Demand fair; trend steady; supply adequate; $75@80.

Philadelphia: Demand slow; supply fair; 34% $80.

Los Angeles: Demand fair; trend steady; supply ample; $64@65.

MALT SPROUTS

Cincinnati: Demand fair; trend steady; supply adequate; No. 1 $49@50.

New Orleans: Demand fair; trend steady; supply adequate; $44@49.

Milwaukee: Demand and supply fair; $43.

Chicago: Demand improved; supply tightening; No. 1 $43@44.

Los Angeles: Demand fair; trend steady; supply ample; $1.65@1.70 a unit of protein.

MEAT SCRAPS

Ogden: Supply average; $82.50 ton in 100-lb. bags.

Cincinnati: Demand and supply fair; trend easy; 50% $69.50 ton, sacked, f.o.b. Cincinnati.

New Orleans: Demand fair; trend firm; supply ample; 50% meat and bone $78@80.

Milwaukee: Demand poor; supply good; 50% $73.

Kansas City: An easier market continues with offerings ample and demand only fair; 50% meat and bones craps $73@80, sacked, Kansas City.

Buffalo: Demand fair; trend steady; supply ample; 50% meat scraps $67.50 ton, bulk; $70, sacked.

Seattle: Demand slow; trend easy; supply ample; $72.50 ton, ex-warehouse, truck lots, 50% protein.

Ft. Worth: Demand fair; supply limited; meat and bone, 50% $73@74 sacked, f.o.b. or delivered Ft. Worth.

Chicago: Demand slow; supply adequate; 50% protein $70@80; 55% $87.

Boston: Demand fair; trend steady; $1.10 a protein unit; converted 50% $67.50.

Louisville: Demand fair; trend steady; supply normal; $80@85 ton.

Omaha: Demand good; supply ample; $82.50.

Portland: Demand slow; supply ample; trend unchanged; $1.40.

San Francisco: Demand fair; supply good; $1.50 a unit of protein.

Wichita: Demand fair; supply sufficient; 50% $80, f.o.b. plant; 55%, no quotations, no offerings.

MILLFEED

Minneapolis: Demand is light, with some track supplies of bulk middlings putting some pressure on prices. However, production is lighter and prices are only slightly easier than a week ago. Quotations: bran $37@37.50, standard midds. $38@38.50, flour midds. $46@48, red dog $50@52.50.

Kansas City: Trend is a little stronger on bran and about steady on shorts; upturn is due mostly to a lighter available supply with demand only moderate; quotations Nov. 9: bran $36@36.50, sacked, Kansas City; shorts $39@39.50, sacked, Kansas City.

Omaha: Demand poor; supply ample; bran $36.25, shorts $39.25, standard midds., bulk $36.

Wichita: Demand good; supply about offsets demand; basis Kansas City Nov. 8: bran $36@36.50, shorts $39@39.50; bran advanced $1.50@1.75 ton and shorts 50@75¢ ton, compared with the preceding week.

Ft. Worth: Demand very light; supply sufficient; carlots, burlaps, prompt, wheat bran $43@44, gray shorts $45.50@46.50, delivered TCP; unchanged to 50¢ higher on bran and 50¢@$1.50 lower on shorts compared with a week previous.

Chicago: Bran and standard midds. climbed somewhat in price in the central states during the week ending Nov. 9, but flour midds. and red dog continued to show weakness. The latter two types are confronted with a seasonal decline in use, even though flour mills are not making burdensome offerings of any millfeeds. This light selling effort tends to bolster the lighter millfeeds, which have met a fair demand in the last few days. Quotations Nov. 9: bran $41.50@42, standard midds. $42, flour midds. $53@53, red dog $54@55.

Milwaukee: Demand and supply fair; standard midds. and pure bran, both $42.50@43.

Cincinnati: Demand for bran good, middlings fair; trend stronger; supply adequate; bran $46@47, middlings $46@49.

Indianapolis: Demand fair; trend unsettled; supply sufficient; soft winter wheat bran $49, standard midds. $49.50, mixed feed $49, gray shorts $50.

Louisville: Demand fair; trend stronger; supply normal; bran $45.50, mixed feed $47.90, shorts $48.90, middlings $48.50.

Buffalo: Millfeed sales were quiet last week. Prices of bran and middlings gained $1 early in the week but they backed down later. Medium and large mixer buying is scanty and on a spot basis. Country demand is slow because of previous sales of sacked millfeed for deferred usage. One spokesman called sacked and bulk middlings "a drug on the market." There are supplies of bulk bran and especially bulk and sacked middlings on the tracks. Bran ended the week steady. Middlings and heavy feeds were steady to 50¢ lower.

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TERMINAL ELEVATORS:
Kansas City, St. Louis, Chicago, Buffalo, Omaha, Toledo, Columbus, Fort Worth, Portland, Galveston, Enid, Minneapolis, Norfolk, Nashville, Louisville, Memphis, Houston

Quotations Nov. 9: bran $43.50@44, standard midds. $43.50@44.25, flour midds. $54 @55, red dog $54@56.50.

New York: Bran $50.50@51, standard midds. $52@52.50.

Boston: Demand cautious; supply plentiful; bran $51, middlings $52.

Philadelphia: Demand spotty; supply ample; bran $50, standard midds. $50, red dog $52.

New Orleans: Demand fair; supply adequate; trend stronger; bran $45@45.75, shorts $49@49.50.

Memphis: Demand poor; trend steady; supply adequate; wheat bran $43, gray shorts $45.50, standard midds. $44.50.

Seattle: Demand and trend steady; supply good; $46 ton, delivered common transit points, carlots.

Portland: Demand good; supply ample; trend unchanged; $46.

San Francisco: Demand fair; supply ample; $51; red bran $52.50.

Los Angeles: Demand fair; trend steady; supply ample; mill run, Utah-Idaho billing, sacked $52@53; red bran, delivered CCF, sacked $53.50@54.50.

Ogden: Supply average; to Utah and Idaho: red bran and mill run $44, middlings $49; to Denver: red bran and mill run $51, middlings $56; to California: red bran and mill run $51.50, middlings $56.50, f.o.b. San Francisco and Los Angeles.

MINERAL FEED

Ogden: Supply average; $105 ton, 50-lb. blocks; $95 ton, granular, 50-lb. bags.

Indianapolis: Demand good; trend firm to unchanged; supply ample; all-purpose with iodine $42 ton.

Seattle: Demand steady; supply ample; trend unchanged; $65 ton for high phosphorus mixtures; $45 ton for competitive brands.

Ft. Worth: Demand fair; supply ample; all-purpose granules $66, block $90, mineral phosphorus 6%, granules $93, block $103; cattle-sheep mineral, 7% phosphorus, granules $90, block $99; hog mineral, phosphorus 3½%, granules $81, phosphorus 2% $55 (all in 50-lb. paper bags).

Sioux City: 50-lb. mineral blocks, 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

Omaha: Demand good; supply tight; $85 sacked, $95 blocks.

Portland: Demand good; supply ample; trend unchanged; $42.

San Francisco: Demand steady; supply good; all-purpose with iodine $70.

Wichita: Demand good; supply about offsets demand; all-purpose with iodine, 50-lb. blocks $92.50, 100-lb. bags $87.50, f.o.b. plant.

MOLASSES

Atlanta: Demand good; trend steady; supply limited; citrus $10 ton, f.o.b. Florida producing points, immediate.

Buffalo: Demand and supply good; trend steady; 14¢ gal., f.o.b. Albany.

Los Angeles: Demand good; trend steady; supply ample; $22, f.o.b. tank cars; $22.25, f.o.b. tank trucks, both Los Angeles harbor.

Cincinnati: Demand fair; trend steady; supply adequate; 10@10¼¢ gal., New Orleans.

Minneapolis: Market steady to easier; 10@10¼¢ gal., f.o.b. New Orleans; $23 ton, West Coast.

Milwaukee: Demand fair; supply adequate; 10½¢ gal., New Orleans.

Kansas City: Demand fair; offerings adequate; trend steady at 10@10¼¢ gal., New Orleans, mostly 10¢ gal.; $25, West Coast.

Beaumont: Trend steady; blackstrap 11¢ gal., tank cars and tank wagons, f.o.b.

New York: Trend steady; blackstrap 12½¢ gal., tank cars and tank wagons, f.o.b.

New Orleans: Demand fair to slow; trend steady; supply adequate; 10¼¢ gal. in tank cars, f.o.b. New Orleans.

Indianapolis: Demand good; trend steady; supply ample; 16½¢ gal., tank car lots, f.o.b. Gulf ports.

Seattle: Demand steady; supply good; trend unchanged; $20 ton, f.o.b. Seattle, tank car lots.

Ft. Worth: Demand fair; supply ample; blackstrap 12¢ gal., f.o.b. Houston; carlots, delivered Ft. Worth, cars and/or truck $27.52, seller's market price on date of shipment; maximum 13¢, November-December shipment.

Boston: Demand fair; supply adequate; 13¢ gal. in tank cars; forward bookings 14¢.

Louisville: Demand fair; trend steady; supply normal; 10¢ gal., tank car lots, f.o.b. Gulf ports.

Portland: Demand good; supply ample; trend unchanged; $20.

San Francisco: Demand and supply good; $23 ton, f.o.b. cars Richmond, Cal.

Memphis: Demand poor; trend steady; supply ample; blackstrap 10¼¢ gal., tank car, f.o.b. New Orleans.

NIACIN

New York: Trend firm; $8 kilo, 50-kilo lots; $8.10 kilo, 10-kilo lots; $8.20 kilo, 5-kilo lots; $8.30 kilo, 1-kilo lots; freight prepaid or paid to destination.

OAT PRODUCTS

Los Angeles: Demand moderate; trend steady; supply ample; white pulverized $64.

Cincinnati: Demand fair; trend steady; supply adequate; reground oats $70@71, pulverized white oats $46, rolled oats $83 @86.

New Orleans: Demand fair; trend steady; supply ample; pulverized white oats $50.50 @57, mixed feed oats $43@45.50.

Indianapolis: Demand fair; trend lower; supply sufficient; pulverized mixed oats $42.50; pulverized white oats $49.50; crimped oats $63; feeding oatmeal $68; rolled white oats $85; No. 2 white recleaned oats 85¢ bu., sacks extra.

Minneapolis: Market steady; demand improved in some areas, dull elsewhere. Quotations: feeding rolled oats $77@80, standard pulverized $41.50, feeding oatmeal $68 @69, reground oat feed $15.

Milwaukee: Demand and supply fair, pulverized, white $41, feed $40; molasses oat feed $35; reground oats, 3% $15, 5% $18.

Seattle: Demand and trend steady; supply good; feed oats $61 ton, ground oats $61 ton, rolled oats $65 ton, all ex-warehouse, l.c.l.

Chicago: Demand improved; supply adequate; reground oat feed $13.50@14; fine ground feeding oatmeal $70.50@74; feeding rolled oats $76@80.

Boston: Demand steady; supply adequate; white pulverized, Canadian $48; ground mixed $42; reground oat feed $19.

Philadelphia: Demand slow; supply light to fair; quotations: pulverized white oats $51, domestic oat feed $22, Canadian oat feed $24.

Louisville: Demand fair; trend fairly steady; supply normal; reground $21.35, rolled oats $32.25, feeding oatmeal $76.85, pulverized white oats $47.35, crimped white oats $65.35 ton.

Portland: Demand slow; supply ample; trend unchanged; rolled $62, ground $59, cleaned $63.

Memphis: Demand poor; trend lower; supply ample; 3½% protein, reground oat feed $30.30.

OYSTER SHELL

Los Angeles: Demand steady; trend firm; supply ample; local $18.25, eastern $25.

New Orleans: Demand good; trend firm; supply ample; $15@18 local origin.

Seattle: Demand steady; supply good; trend unchanged; eastern $22 ton, western $28 ton, both ex-warehouse, l.c.l.

Boston: Demand and supply steady; in paper $21.44.

Louisville: Demand good; trend firm; supply normal; $19.39 ton.

Portland: Demand good; supply ample; trend unchanged; western $29, eastern $24; granite and crystal grits, both $25.

San Francisco: Demand fair; supply ample; local $15, eastern $26.

PEAT MOSS

San Francisco: Demand fair; supply ample; $2.35 bale.

Boston: Demand steady; supply adequate; $3.05@3.10 bale in carlots.

Chicago: Demand good; supply ample; $3.65 standard 7½ cu. ft. bale.

New Orleans: Demand dull; trend steady; supply ample; 100-lb. bales German moss $3.50@4.

Philadelphia: Demand dull; suppy ample; $2.90, f.o.b. pier.

Los Angeles: Demand fair; trend steady; supply ample; Canadian $3.40, 300-bale lots, delivered California main line points.

PEANUT OIL MEAL

Milwaukee: Demand and supply fair; 26% $56; 45% $76.

POTASSIUM IODIDE, U.S.P.

New York: Trend steady; U.S.P. granular and powder, free flowing powder $1.90 lb. in 200-lb. lots $1.92 lb. in 100-lb. lots, $1.95 lb. in 25-lb. lots; 90% KI in calcium stearate, calcium carbonate or magnesium carbonate mixtures, $1.81 lb. in 200- and 250-lb. lots, $1.83 lb. in 100-lb. lots, $1.86 lb. in 25-lb. lots, f.o.b. New Jersey; freight prepaid except on 25-lb. lots.

RIBOFLAVIN

New York: Trend firm; feed grade (in feed supplements): 6¢ gram in 2.63 to 10 gm./lb. mixtures; freight prepaid or paid to destination.

RICE BY-PRODUCTS

Atlanta: Demand fair; trend steady; supply limited; bran $45.85, sacked, immediate.

Memphis: Demand nil; trend steady; supply limited; bran $34 (nominal), sacked, f.o.b. Arkansas points.

Ft. Worth: Demand fair; supply scarce; carlots, rice bran $36@37, prompt shipment, f.o.b. south Texas rice mills; hulls $2@3, f.o.b. mills.

New Orleans: Demand fair; trend steady; supply limited; bran $42@43; no quotes on hulls, Louisiana mills.

Los Angeles: Demand moderate; trend steady; supply ample; bran $53.61, California production, rail.

San Francisco: Demand good; supply fair; bran $55, polish $62.

SCREENINGS

Minneapolis: Demand continues dull, with offerings not pressing, and prices are unchanged. Quotations: country run $22, lights $5@14, mediums $14@22, heavies $22@30; Canadian $15, bulk, Duluth; Canadian ground $28, sacked, Minneapolis; flax screenings $20.

Buffalo: Demand and supply fair; trend steady; ground, sacked $31, New York, L. & R.; unground, bulk $24.25, New York.

Cincinnati: Demand and supply fair; trend easy; Canadian $28@30; barley $18@24, both bulk, delivered.

New Orleans: Demand quiet; supply limited; trend steady; 3/34 in. grind $39.50 @41.50.

Chicago: Demand improved; supply plentiful; ground grain screenings $31.75; Canadian, bulk $23.75.

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Chicago: $22@22.75.
Kansas City: $22.15@22.80.
St. Louis: $21.40@22.
Des Moines: $22.50.
Philadelphia: $21.55@22.15.
Minneapolis: $23.15@23.85.
Buffalo: $22.50@23.10.
Atlanta: $18@18.70.
Memphis: $19.40@19.95.

SORGHUMS

Los Angeles: Demand and trend steady; supply ample; No. 2 milo, delivered CCF, prompt $2.55.

Cincinnati: Demand fair; trend steady; supply adequate; $2.55@2.60.

Ft. Worth: Demand fair; offerings limited as most grain is going into government loan; carlots, bulk, No. 2 yellow $2.07@2.10, delivered TCP.

SOYBEAN OIL MEAL

Minneapolis: Prices slipped back further this week, but by the end of the period were showing more strength and the possibility of advancing further. Demand im-

COTTONSEED OIL MEAL FUTURES

Closing prices of cottonseed oil meal (41% protein) on the Memphis Merchants Exchange in dollars per ton (bulk):

	Nov. 4	Nov. 7	Nov. 8	Nov. 9	Nov. 10
December	....@ 47.25	46.00@ 46.75	45.50@ 45.55	....@ 45.50	45.00@ 45.75
March	....@ 47.25	....@ 46.25	45.50@ 45.75	....@ 45.90	45.50@ 46.00
January	47.25@ 47.50	....@ 46.25	45.50@ 45.75	45.75@ 45.90	45.50@ 46.00
May	47.00@ 47.50	46.25@ 46.75	....@ 45.50	45.90@ 46.00	45.50@ 45.75
July	47.25@ 47.75	....@ 46.75	....@ 46.00	46.00@ 46.20	45.75@ 46.50
October	....@	46.00@ 46.75	45.50@ 46.75	45.50@ 46.50	45.50@ 46.50

SOYBEAN OIL MEAL FUTURES

Closing prices of soybean oil meal (basis Decatur, Ill.) on the Chicago Board of Trade and on the Memphis Merchants Exchange, in dollars per ton (bulk basis):

CHICAGO

	Nov. 4	Nov. 7	Nov. 8	Nov. 9	Nov. 10
December	50.55@ 50.75	50.05@ 50.10	....@ 49.60	50.05@ 50.10	49.75@ 49.85
January	....@ 51.30	50.55@ 50.60	....@ 50.10	50.50@ 50.60	50.20@ 50.40
March	52.30@ 52.50	....@ 51.85	51.25@ 51.45	....@ 51.65	....@ 51.30
May	....@ 53.25	....@ 53.50	51.90@ 52.10	52.25@ 52.35	....@ 52.00
July	....@ 53.20	52.40@ 52.60	51.80@ 51.90	52.10@ 52.25	51.90@ 51.95
August	53.10@ 53.20	....@ 52.50	51.90@ 52.00	52.15@ 52.25	....@ 51.90

MEMPHIS (unrestricted)

	Nov. 4	Nov. 7	Nov. 8	Nov. 9	Nov. 10
December	50.65@ 50.90	49.95@ 50.15	49.35@ 49.60	....@ 50.20	49.50@ 49.80
January	51.10@ 51.35	50.50@ 50.75	50.00@ 50.35	50.50@ 50.75	....@ 50.25
March	52.10@ 52.25	51.50@ 52.00	51.15@ 51.50	51.60@ 51.75	....@ 51.25
May	....@ 53.10	....@ 52.45	51.75@ 52.00	52.15@ 52.45	....@ 52.00
July	....@	....	51.70@ 51.90	52.10@ 52.50	51.75@ 51.90
August	....@	....	....@	....@	51.75@ 51.90
September	....@	....	....@	....@	49.00@ 51.50
October	....@	....	....@	....@	48.50@ 50.50

MILLFEED FUTURES

The following is a comparison of settling prices at Kansas City for Nov. 3 and 10:

Bran—	Nov. 3	Nov. 10
November	$36.45@ 36.85	$35.25@ 36.00
December	37.85@ 38.25	36.50@ 37.40
January	38.75@ 39.10	37.75@ 38.40
February	....@ 40.00	38.85@ 39.50
March	40.65@ 41.00	39.75@ 40.60
April	41.75@ 42.70	40.25@ 41.40
Shorts—		
November	$39.50@ 39.80	$38.25@ 39.10
December	....@ 40.45	39.50@ 39.20
January	....@ 41.75	39.75@ 40.20
February	42.00@ 42.00	40.60@ 41.40
March	43.60@ 44.00	43.25@ 43.75
April	45.00@ 46.00	44.35@ 44.55

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Hens and Pullets of Laying Age, Pullets Not of Laying Age, and Potential Layers on Farms, Nov. 1

Year—	North Atlantic	East North Central	West North Central	South Atlantic	South Central	Western	U.S.
Hens and Pullets of Laying Age on Farms (thousands)							
1944-53 (average)	57,726	72,635	99,663	34,675	66,096	34,893	365,688
1954	73,752	79,163	98,324	35,998	61,956	40,569	389,763
1955	71,984	78,478	97,042	35,429	59,400	40,156	382,484
Pullets Not of Laying Age on Farms (thousands)							
1944-53 (average)	15,775	21,404	36,793	11,031	19,926	7,845	112,774
1954	14,323	12,721	23,411	8,200	12,441	5,689	76,785
1955	14,323	12,339	21,772	8,610	13,192	6,225	76,461
Potential Layers on Farms* (thousands)							
1944-53 (average)	73,501	94,039	136,456	45,706	86,021	42,738	478,461
1954	88,075	91,884	121,735	44,198	74,397	46,258	466,517
1955	86,307	90,817	118,814	44,035	71,592	46,380	457,945

*Hens and pullets of laying age plus pullets not of laying age.

proved at the lower levels. Quotations: $46@47.50, bulk, Decatur.

Kansas City: Market weak with demand light and offerings adequate; for nearby shipment offerings are down to $47, bulk, Decatur, for Kansas City and West; $47.50 for last half November; unrestricted $1 higher.

Atlanta: Demand slow; trend weak; supply ample; 44% $84.50, sacked, immediate.

Ft. Worth: Demand improved; supply sufficient; carlots, 44% $69@72.50, depending on origin; truck lots $66@67, prompt, delivered Ft. Worth.

Decatur: Demand slow; supply adequate; 44% bulk, unrestricted $48.

Chicago: Soybean oil meal met virtual complete indifference among buyers in the central states during the week ending Nov. 9. Some traders called the market "demoralized" as spot prices dipped to around the lowest level in the last several years. Soybean processors are said to be turning out a considerable amount of meal to fill oil commitments, and a poor mixed feed market is handicapping the movement of meal. Quotations Nov. 9: 44% protein soybean oil meal, unrestricted shipment $57.

Louisville: Demand dull; trend easy; supply ample; $60.31 ton, off $3 ton from last week.

Omaha: Demand pretty good; supply adequate; 44% solvent $64; 41% expeller $66.50, pellets $69.

Portland: Demand slow; supply ample; trend unchanged; November $48, December $50.

San Francisco: Demand fair; supply ample; $78.57.

Memphis: Demand poor; trend lower; supply plentiful; prime 44% solvent $57, sacked, f.o.b. Memphis.

Wichita: Demand slow; supply sufficient; 44% $71.

TANKAGE

Omaha: Demand good; supply ample; $82.50.

Louisville: Demand fair; trend steady; supply normal; $82.50@87.50 ton.

Milwaukee: Demand poor; supply good; 60% $75.

Kansas City: Market about steady at lower levels; demand fair; 60% digester $73@80, sacked, Kansas City.

Chicago: Demand slow; supply adequate; 60% protein $75@85.

New Orleans: Demand slow; trend steady; supply ample; 60% $85.50@88.

Arcady Relocation Delayed Until Nov. 21

CHICAGO — The move of the Arcady Farms Milling Co., Chicago, to the mill in Riverdale, Ill., has been delayed until Nov. 21. It was planned to have the shift of its executive offices completed by Nov. 14, but a delay in telephone installations caused the postponement.

The new milling address of the firm will be: Arcady Farms Milling Co., 500 W. 138th St., Chicago 27, Ill. The company suggests that all correspondence placed in the mails on or after Nov. 16 be sent to the new address. The new telephone number, to be put into use the morning of Nov. 21, will be INterocean 8-5700. Two direct lines will reach the order department. They are INterocean 8-6050 and INterocean 8-6051.

RATIOS

(Continued from page 1)

in prices received for dairy products was primarily responsible for the 3% increase in this index during the month. The index in mid-October was 264, compared with 262 a year earlier.

A greater than seasonal drop in chicken prices and a contra-seasonal drop in egg prices during the month ended Oct. 15 were responsible for the 3% decline in the poultry and egg price index.

Chicken prices (farm chickens and commercial broilers) on Oct. 15 averaged 20.4¢ lb. live weight compared with 22.6¢ in September and 17.8¢ in October last year. Farm chickens averaged 18.1¢ lb. and commercial broilers 22.3¢, compared with 14¢ and 21¢, respectively, in mid-October last year.

Turkey prices in mid-October averaged 31.5¢ live weight compared with 27.1¢ a year earlier.

Continued heavy marketings brought lower prices to farmers for the more important species of meat animals. The index dropped 4% (10 points) from mid-September to mid-October. This was 9% below October, 1954, and the lowest since September, 1946.

Broiler-Feed Ratio Continues Downward

COLLEGE PARK, MD. — The broiler-feed ratio on Nov. 4 in the Maryland broiler area declined to 4.1 from 4.4 the previous week. This level compares with 4.4 one year ago and 5.2 six months ago. The average price of broilers was reported at 18.7¢ lb. and 20% broiler mash averaged $91.86 ton.

RENDERERS

(Continued from page 8)

if adequate protein, minerals, and vitamins are provided.

Feeding trials with cattle at the North Carolina Agricultural Experiment Station have shown that the addition of 5% annual fat to a fattening ration has reduced the pounds of feed required per pound of gain by approximately 10%.

Meat scraps and tankage are animal by-product feeds which have long been recognized for their value in supplementing farm grown feeds. Although discoveries in recent years have made it possible to formulate efficient diets for swine and poultry from all vegetable sources of protein, continued research is revealing means of making the most efficient use of meat scraps and tankage in ration formulation. These materials are valued for the trace nutrients which they contain in addition to their protein, calcium and phosphorus content.

Dr. S. N. Studer, U.S. Department of Agriculture, Washington, gave the delegates a report on export prospects and problems. He gave credit to the NRA in helping the USDA establish regulations authorizing the inspection service necessary to certify exports as required by many foreign governments. He recognized that the NRA assisted in bringing about the regulations which authorize the department to issue and endorse certificates to accompany shipments of animal byproducts such as hides, meat meal, tankage, bone meal and similar products to foreign countries.

Vernon Schwaegerle, American Meat Institute, Chicago, talked of the importance of advertising and public relations in trade association work. He outlined the work of the AMI for the last several years and endorsed the value of its operations in helping produce a more favorable consumer acceptance of meat and meat products.

The two-day program of the NRA meeting reached a climax with a "Renderama," taking the form of a panel presentation on all phases of the rendering industry. Serving on the panel were R. A. Behrmann, Emery Industries, Inc., Cincinnati, telling of industrial fatty acids; Robert J. Fleming, National By-Products, Inc., Des Moines, Iowa, fats in feeds; R. A. Duncan, Procter & Gamble Co., Cincinnati, soap industry; and Mr. Rubin. The panel was moderated by Mr. Van Hoven.

During the presentation of his phase of the program, Mr. Fleming talked of the practical side of selling fats to the feed industry. He urged more missionary work in presenting the use of stabilized animal fats in livestock and poultry feeds and in dehydrated alfalfa meal. Many in the feed trade are familiar with the remarkable story research has provided for fats, he said, but they are quite unfamiliar with the characteristics of the products, the trading specifications used, and the technical aspects of handling and storing. They are unfamiliar with the markets and are fearful lest the price advance sharply and the product become uneconomical. It is up to the rendering industry to explain that a tremendous surplus of fats exists and that the fat market is unlikely ever again to be subject to extreme fluctuations. In general, Mr. Fleming encouraged a closer association with the feed industry, and more personal selling.

Directors of the organization decided that the next annual meeting of the NRA will be in Boston, with the date to be announced later, and the 1957 meeting is scheduled for Los Angeles. A resolution was passed congratulating the feed industry on the development of the feed technology program at Kansas State College in Manhattan, Kansas.

ILLINOIS

(Continued from page 6)

tablished during the coming year, he said.

He paid high tribute to the educational and public relations work done in Illinois by the late Wallace A. Hinkle, sales manager, Faultless Milling Co., Springfield. Members stood in a moment of silence to the memory of Mr. Hinkle, who died suddenly during the summer.

In a drive for new members, Critic Feed Division, Beardstown (Ill.) Mills, came in first and was awarded a Westinghouse television set. It was accepted on behalf of the company and its salesmen by Robert G. Fischer, sales manager, who said the set would be donated to a Springfield charitable orphanage. Presentation was made by Mr. Siemer at the Illi-

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nois egg breakfast Nov. 3 in the Leland Hotel.

Individual winners in the membership contest were Robert Shaver, Allied Mills, Inc., Alfred Eisenmann, Honeggers' & Co, and Carl Graning, Critic Feeds. Each was awarded a prize. About 100 new members were secured during the drive which will be continued during the coming year.

C. J. McAleavy, Wausau, Wis., second vice president, American Poultry Hatchery Federation, urged the feed dealers and hatcherymen to take even more interest in association work. "You men are farm advisers every day, supplementing the work done by county and state advisers, and therefore you should be well informed on the problems and needs of farmers," he said.

Ray B. Bowden, executive vice president, Grain & Feed Dealers National Assn., Washington, D.C., in his roundup of Washington developments, predicted a reduction in personal income taxes and possibly some downward revision in excise levies. He did not expect any change in corporation taxes.

Mr. Bowden forecast possible trouble ahead for feed store operators in connection with the wage and hours regulations. Up to now, most feed stores have been exempt from the wage requirements on the grounds of too few employees, but he said efforts probably will be made by government administrators to eliminate this exemption. If successful, the burden on feed stores would be made heavier by reason of the $1 an hour minimum.

The farm problem is very confused, Mr. Bowden said. Recent polls have shown that independent farmers are not as concerned about the declining farm income as are members of some big farm associations. Even the associations are divided in their opinions about high versus flexible farm supports, but he said both sides are beginning to realize that high supports won't work.

So far, high supports have only created unmanageable surpluses which the government is finding it cannot sell or even give away without disrupting domestic or foreign economics, Mr. Bowden said.

Recent discussions of a two-price farm program, under which farmers would be paid the difference between open market prices and a fixed support level, indicate that many farmers are opposed to the plan, Mr. Bowden said. Farmers do not wish to be openly subsidized.

Under the title, "How to Get Better," Joseph Burger, sales manager, Corneli Seed Co., St. Louis, presented a highly inspirational address on character, personality and aggressiveness of employees who deal with the public.

George P. Johns, general manager, Credit Bureau of Decatur, Ill., urged feed and hatcherymen to try for more credit and charge account business, but warned that such business should be properly managed to prevent delinquencies and losses.

The nation's business is built on credit, he said, adding that at least 50% of all business is conducted on a credit basis. People like to say "charge it" and will be less price conscious in their purchases, he said. Properly managed credit need not show bad-account losses, he said, but he cautioned dealers not to go into credit business without a sound policy and a department to administer it.

The second day's business session was devoted to a University of Illinois panel discussion, moderated by Dr. L. E. Card, head of the animal science department. Members of the panel and their subjects were Dr. J. O. Alberts, professor, veterinary pathology and hygiene, "Current Poultry Disease Problems"; Dr. K. E. Gardner, professor, dairy production, "Not All Dairymen Are Going Broke"; Dr. A. L. Neumann, professor, animal science in charge of beef cattle, "Marketing Low-Value Crops Through Beef Cattle"; Dr. H. M. Scott, professor, animal science in charge of poultry, "New Poultry Management Wrinkles," and Dr. S. W. Terrill, professor in charge of swine, "Breeding, Feeding and Managing the Meat-type Hog."

A feed and hatchery trade show composed of nearly 50 exhibits filled the Springfield Armory hall.

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MARKETS

(Continued from page 3)

said to be increasing their stocks of farm animals, especially poultry. This is an indication that the area farmers consider the present market position as only a temporary decline, which will adjust itself during the months ahead to provide more satisfactory cash returns.

The formula feed price decline continued this week, dropping off another 50¢ ton, while mills were mostly continuing operations on a four or five day basis.

Central States

Feed business continued at the same slow pace reported in the last few weeks during the period ending Nov. 9. Industry observers say there appears to be little chance for a major improvement in the next few weeks, but some upturn is looked for before the turn of the year.

A turn to worse weather probably would help formula feed sales, feed men say. In the Midwest some cattle still are out in the fields, and it will take a snow to bring them into the feedlots. Other livestock probably would be fed more on formula feeds if the weather turned bad.

In the meantime, the poor returns farmers and feeders are receiving continues to provide the major factor in determining feed sales. With the products they buy costing more and hogs and cattle and poultry and eggs bringing smaller returns, feed salesmen say it is difficult to persuade feeders to maintain good feeding practices, even though it would be to their advantage if they did.

Firms generally are operating four to five days each week, with the order backlog large enough to permit day-to-day operations. Prices generally were steady this week, but are expected to show a moderate decline in the period ahead.

Pacific Northwest

With turkeys for the most part gone to market, the feed business definitely slumped during the past week or so, and here and there feed men indicated that they had odd cars of ingredients to resell, which, of course, is the best kind of an indication that business has fallen off a bit more than had been anticipated.

Turkey men are getting pretty good prices for their birds and moving them to market as fast as possible, and those few who are holding their turkeys for the Christmas market are doing so in the hope that the market for fresh birds will at that time justify their having taken the gamble. However, most turkeys will be gone in another couple of weeks,

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according to trade sources. Broiler operators are rather discouraged, with the price having slipped down to a net of 22¢, and the break-even point is calculated at somewhere around 26¢. It is not anticipated that this market will show much improvement before the first of the year.

There is rather heavy selling pressure on all of the proteins, and none of them have any life, while trading in grains continues in small volume and rather spotty. Millfeed is steady at $46 ton, but with little or no trading, and the whole picture is one of sluggishness and apathy.

Formula feed prices have held steady, but with an easy undertone, and hay traders are complaining about lack of business. It looks as if either very severe weather or a general upturn in end-product prices are about the only things that will give any life to the feed outlook.

Northeast

A seasonal decline in sales caused formula feed manufacturers' running time to slip a little this week. In the past five years sales in November have dropped below October, and so far this month has proved to be no exception.

Current prices are attractive to farmers, but the declining market structure is adding to the feed manufacturers' problems.

Trade sources said that distress selling in broilers is pretty well cleared up, although there are some sporadic outbreaks. Broiler prices in general were steady, but there was a 1¢ decline in some areas. The egg market was irregular, with prices steady in some sections and weak and unsettled in others.

Egg mashes continued to lead in sales turnover. Broiler feed sales were slow and turkey feed sales were down. Dairy feed demand hasn't responded too much yet to colder weather, but by the end of this month there should be a definite pick up.

Prices of ingredients were generally steady to lower last week. Corn was off 1@2¢, oats held barely steady, barley was off 1¢ and feed wheat was about unchanged. Soybean oil meal was off $3@4 to the lowest point yet for the current crop. The deferred deliveries, however, were a little firmer. Linseed oil meal held about steady. Cottonseed oil meal declined $1.50 to $2.

Average running time of formula feed manufacturers last week declined to 40 hours from 44 hours in the previous week.

Millfeed sales were quiet. There are supplies of bulk bran and especially bulk and sacked middlings on track, because of lack of demand and fairly good flour mill running time. Both bran and middlings were up $1 early in the week but they lost their gains later. Bran ended steady. Middlings and heavy feeds were steady to 50 cents lower.

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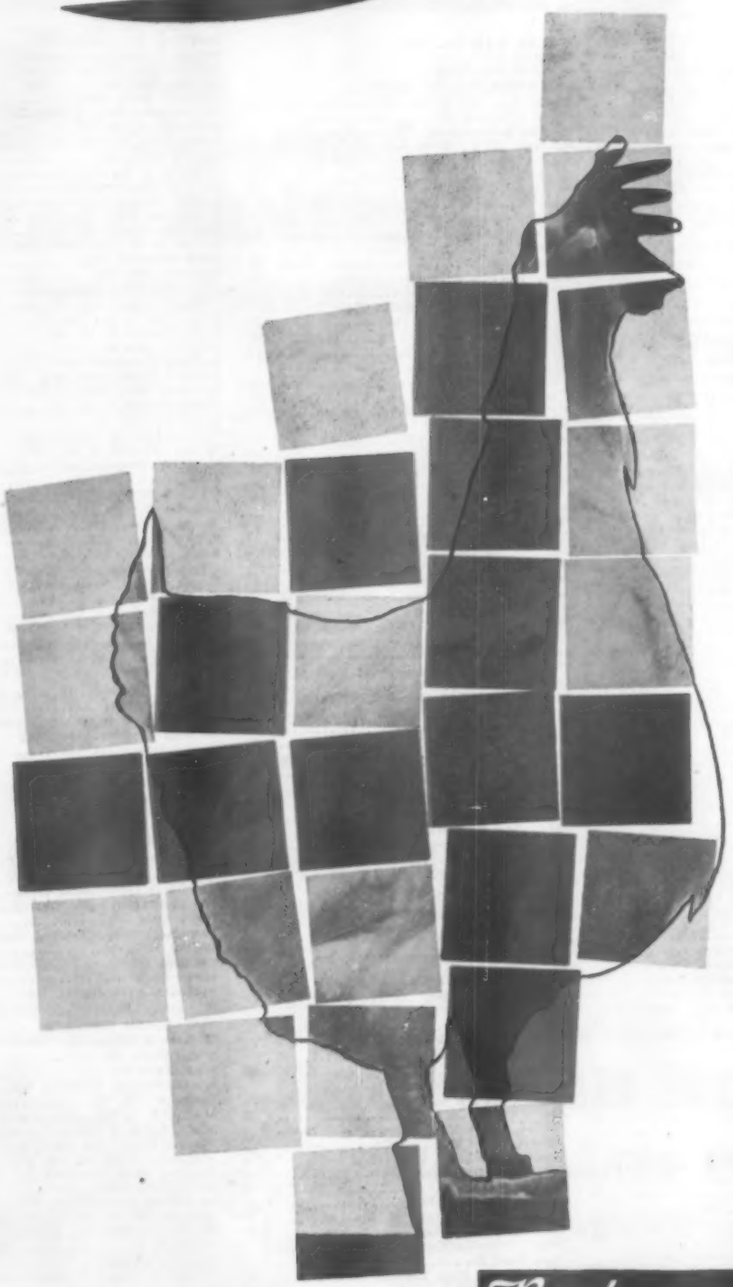

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